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Monthly



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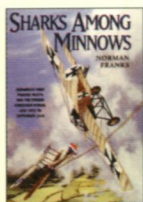


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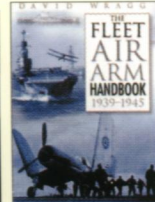
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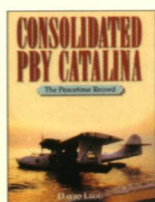
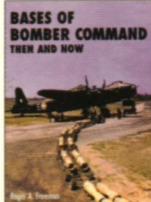
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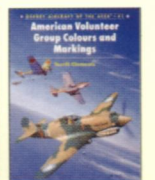


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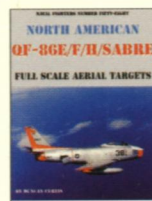
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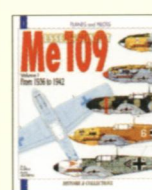
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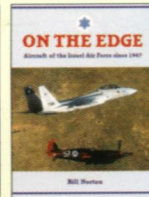
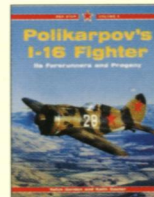
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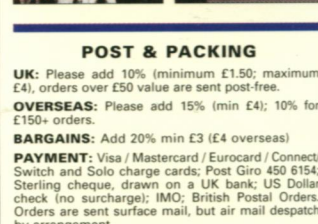
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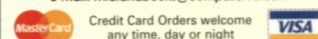
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EDITORIAL

Going by the feedback thus far, Model Aircraft
 Monthly has been very well received. I am delighted to
 read that many of you feel that the format and style of
 the title is just right and that this is "just what you
 have been waiting for", as many of you have put it.

Now that the title is on a regular monthly
 production schedule we can start planning features etc.
 This will allow me to tie in much of what we will
 cover with what is available to the modeller. This title
 is a resource, and as such supports those items released
 within the hobby in kit form. We will not restrict our
 coverage just to those items that are new, because we
 understand the need to cover anything that is out there
 as a kit. This of course means there is a huge subject
 area from which we can choose feature articles, so we
 really are starting with a 'clean slate'. The sheer scope
 of this is daunting, but it does mean that there are very
 few subjects we cannot cover, as most aircraft types, no
 matter how obscure, have been kitted! We will keep the
 information flowing in a manner that is accessible and
 of use to the modeller and hope that you all enjoy
 reading what we produce each month.

As a final note, I would like to hear from anyone out
 there who is considering starting to contribute any
 feature articles to this title. I am always delighted to
 hear from any potential new contributors, so please
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Richard A. Franks
 Group Editor, SAM Publications

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The Oldest Swingers in Town

RAAF F-111 OPERATIONS

by Glenn Sands

Regarded by many aviation enthusiasts as perhaps one of the most controversial aircraft ever to enter service, the General Dynamics F-111 eventually proved its critics wrong, by having the ability to strike at installations deep within enemy territory with little or no warning, and in effect, 'put a bomb through the air vent in the middle of the night' - and leave the scene at over the speed of sound at little more than tree-top height. Impressive for an aircraft that at one time was regarded as a design that was too radical and had little future in aerial warfare. The USAF Generals had other ideas and were to debut the F-111 in combat over North Vietnam under a deployment known as Combat Lancer. They were to use the aircraft to send a political message to Libyan leader Colonel Gaddafi, and end its career during Desert Storm. Although deliberately overshadowed by the US Department of Defense (DoD) media machine by the newer F-15Es and F-117s, so as to allow further funding for more of these types, the F-111s had a greater hit rate on targets in all weathers and, towards the end of the war were given the role of headquarter bunker busting with the specially designed Deep Throat, Precision Guided Munitions (PGMs). These were modified gun barrels from retired US Navy warships, suitably modified with a seeker head and fins. While the F-111s have long since gone from the ranks of the USAF, the type still flies with the Royal Australian Air Force (RAAF) where The Pig, as it is known, is assured of a secure future for the time being. But things have not always been this positive from when the aircraft were first ordered by the RAAF.

The original requirement that lead the Australian Government to the F-111 was the need to replace the BAC Canberra; also under consideration by politicians was Australia's unique strategic location and sphere of influence particularly with its near northern neighbour Indonesia, with which at the time relations were less than cordial. The subsequent tender issued

was known as Air Staff Requirement 36 and called for:

'An aircraft to attack enemy targets by day and by night with air-to-surface missiles, or high explosive bombs. A capability for photographic, radar and electronic countermeasures and an ability to accomplish Electronic Countermeasures (ECM) missions was called for...

The specified performance parameters were a maximum speed of Mach 2.0 at 50,000ft and Mach 0.90 at 200ft and a minimum radius of action of 900nm with 1,100nm preferred; it had to be capable of in-flight refuelling and be able to carry a minimum load of 1,000lb bombs or two air-to-surface missiles. All-weather day and night capability was called for.' In May 1963, Australian Prime Minister Sir Robert Menzies announced that a mission led by Air Marshall Sir Valston Hancock would evaluate potential Canberra replacements: in France (the Mirage IV), Great Britain (TSR.2) and the USA, which offered the North American A-5

Pausing at the 'last-chance area' for a few final cockpit checks, is this F-111C, A8-147. The tail shows evidence of the removal of No.1 Squadron's markings. A white dispenser for 25lb practice bomb is carried on the wing pylon

A head-on view of a F-111C being towed out of one of Amberley's giant hangars prior to the start of a night practice mission. Of note in this view are the drooped wing-glove air brakes ('RAAF via Glenn Sands')





1. With its leading edge slats drooped, as shown by the strip of red, a No.6 Squadron F-111C awaits the all clear from ground crews prior to moving. During Australia's summer months, the hot temperatures on the ramp ensure crews leave their canopies open till the very last second

2. Slight colour variations between No.6 Squadron's F-111s are often seen. This example carries the lightning bolt in Ultramarine Blue instead of the more common yellow on its tail

3. An F-111C at rest, illustrating the drooping position of the flying surfaces and crew access ladder, a diorama idea perhaps

4. Aircraft Research and Development Unit (ARDU) operate perhaps the most colourful F-111C, A8-132, to date. Retaining its top camouflage the entire underside and lower fuselage have been painted gloss white with a wealth of photographic data markings, for recording test drops of a variety of weapons

5. Seconds before brake release, an F-111C prepares to thunder down Amberley's main runway. The RAAF serial number is carried in white on the nose gear door

6. Included to illustrate that the Pave Tack pod is occasionally rotated to the open position whilst the F-111C is parked

7. A vintage view of an F-111C cockpit escape module. Although illustrating the instrument panel colours, operational examples have since been up-graded with CRT displays and digital readouts

8. 'Boneyard Wrangler', perhaps the most well-known RAAF F-111 currently in service. The tail artwork, featuring a skull and cowboy hat, was left over from its USAF service days at Davis Monthan and was subsequently modified and retained by RAAF personnel. The aircraft was the display machine at the Avalon 2001 airshow, where it is seen taxiing out



Vigilante, the McDonnell Douglas F-4 Phantom and the developing General Dynamics TFX (later called the F-111).

By this time however the TSR.2 was already out of the running and doubts over the capability of the Mirage IV resulted in the F-111 being selected amid much controversy. Rumours at the time suggest that if the TSR.2 had been selected the British were prepared to loan two squadrons of bombers from the RAF's V-Force and their crews pending the arrival of the TSR.2 into front-line service. Another confirmed report at the time states that upon their return to Australia Sir Valston's team recommended the A-5 Vigilante as, 'an aircraft which meets the Air Staff requirement in all important aspects, and one squadron could be operationally ready by December 1966, or earlier.' Despite these recommendations, the Vigilante quickly disappeared from the competition for reasons which are still unclear even to this day. The F-111 was announced the winner on October 24th, 1963, by Sir Robert Menzies. It was selected to equip two RAAF bomber squadrons, a total of twenty-four aircraft; included in the deal was the free lease of up to two squadrons of RB/B-47Es Stratojets for use by the RAAF until the F-111s arrived.

A Done Deal?

Australia's purchase of the F-111 was not directly from the manufacturer, General Dynamics, but through the US DoD. Australia's purchase was of twenty-four F-111A aircraft of which eighteen would be the standard model and six of the then-proposed RF-111A reconnaissance variant then under testing, but later cancelled after the prototype proved unsuccessful, and in reality offered little that could not be accomplished by a standard variant with a suitable 'recce' pod attached. A memorandum estimated delivery of the first F-111A in later 1967 and the first RF-111A in late 1969. Pricing for aircraft was based on Australia paying, 'only the average estimated unit cost of

development and production of the F-111 based on the total production run, (1,500 examples), rather than the actual costs associated with the production learning curve at the time of specific delivery of the twenty-four aircraft to the RAAF. The final determination of the average estimated unit cost will be made at the time of delivery of the 24th example.' Further stated was that,

'The total programme cost for the Australian purchase will include the flyable cost of each aircraft, reconnaissance equipment to the extent agreed, ground support equipment, training and training devices and one year's initial spares.'

For this revolutionary swing-wing bomber the deal sounded too good to be true, although the Australian Government would come to regret the deal's escalating costs. Although the capabilities of the F-111 were never in doubt, development of such a radical new aircraft would not be without incidents and technical problems. Such events were anticipated by many of General Dynamics' engineers. Under the terms of the agreement the unit cost of each aircraft worked out to be \$A3.8m at that stage and, the total programme cost as \$US124.5m, excluding \$US24.8m for the interim Boeing B-47 Stratojets, although the US was to provide the loan of these bombers free of charge.

In November 1963, three USAF B-47Es arrived at RAAF

With a full load of inert, blue coloured, 500lb bombs an F-111C leaves the photographer behind as it kicks in its afterburners at low level. This aircraft wears the early three-colour Vietnam style camouflage
(©RAAF via Glenn Sands)



If this is not enough to tempt a model out of anyone, then nothing will. Seen during a high-level transit flight is this F-111C, A8-112 from No.6 Squadron. The clean appearance of this F-111 suggests that the aircraft has recently visited Amberley's paint shop (RAAF via Glenn Sands)

Amberley from Guam to begin a series of demonstration flights and a tour of airbases before departing later the same month. In June 1964, Australian Defence Minister Shane Paltridge cancelled the B-47 agreement for the RAAF, as he anticipated there being too many problems integrating the Stratojets into temporary RAAF service.

Also in June, a Technical Agreement between Australia and the United States Defence Departments formalised the specifics of the allotted aircraft, eighteen F-111As and six RF-111As. The F-111As were aircraft numbers 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153 and 155 off the production line, the latter numbers 31, 33, 35, 37, 39 and 41. Provision was also made for the RAAF obtaining a further six aircraft numbered 156 to 161, but at the time the option was not taken up.

In April 1966, the procurement programme was reviewed again, taking account of the improved FB-111A variant then planned for the USAF's Strategic Air Command with its extended wings, strengthened undercarriage and higher operating weight. It was to be this pure bomber/strike version of the F-111 which would now form the basis of the definitive RAAF variant, and would be designated F-111C. The unique hybrid combined the new improvements of the Pratt & Whitney TF30-P-103 turbofan engines and the early design intakes of the F-111A. However, these changes were to push back delivery dates for the RAAF to December 1968, and with these alterations the costs were starting to rise.

After some discussion the Australian Government was unsure of how to utilise the RF-111As in service and in July 1966 announced: 'The RAAF would take delivery of 24 F-111As (now officially designated F-111Cs in the RAAF). It is planned that in early 1970, six of the aircraft would be returned to the US to be fitted out as reconnaissance aircraft. The USAF has estimated the cost of the 'recce' suites as approximately \$US8.9m.' All this was irrelevant when the USAF cancelled the RF-111A, due to the spiralling development costs of the base-line models. The Australian press was having a field day as were those officials who opposed the purchase of the bomber.

By July 1968, things seemed to have settled down, and the first Australian F-111C, A8-125, was test flown by General Dynamics and the hand-over ceremony to RAAF officers was due to take place within the next couple of months. Australian aircraft were to be delivered in what was at the time the standard F-111 Vietnam scheme, tan, olive and green with black undersurfaces. These colours were adopted in favour of a grey and white scheme. RAAF serial allocation was in the range A8-125 to A8-148.

An underside view of A8-129, an F-111C, illustrates the black panels denoting the Pave Pod. A mixed warload of this configuration is for the benefit of the defence photographer only (RAAF via Glenn Sands)



With much pomp and ceremony the first F-111C was handed over on September 4th, and at the time Australian Defence Minister, Allen Fairhall said, 'We have watched the F-111 grow from mock-up to production, and seen problems met and overcome until today, when the defence of our own country and credibility of such assurances as we may give to our friendly neighbours will be vastly enhanced by the availability of the F-111C.'

Within three weeks of the hand-over at Fort Worth, it was decided to delay delivery of RAAF's F-111s pending modification following the 11th crash of a USAF example at Nellis AFB. What was significant about this tragic loss was that one of the crew was Flt Lt N Pollock, an RAAF officer then undergoing conversion training. Around this time structural problems associated with the F-111s wing carry-through box were also beginning to become apparent with cracks appearing along the sub-standard welding. This was later determined as the fault of a sub-contractor charged with the manufacturer of the box. RAAF aircraft were quickly modified but worse was to come. Routine testing of a static mounted wing box showed that within just 8,000 hours cracks were appearing, and another delay was clearly coming. By December 1969, the 15th USAF F-111 had crashed when it shed a wing, and the entire American fleet was grounded for seven months while a rescue recovery programme was implemented, this ensuring that the RAAF would not see their F-111Cs for some time yet.

Already partly dismantled the F-111Cs were placed into storage for three years in a thermostatically controlled hangar at Fort Worth, with their wings removed and engines stored elsewhere. In May 1970, it was announced that the F-111Cs would not be delivered until 1974!

By this time the RAAF was keen to lease an aircraft to equip its anticipated F-111C squadrons at Amberley, Qld, who were then operating fatigued Canberras. The squadrons should have been flying the F-111s for over a year by this stage.

Due to the delay, twenty-four F-4E Phantoms were leased pending the arrival of the F-111s. All the F-4Es were delivered and served with No.82 Wing between September and October 1970, and the last of twenty-three were returned to the US (one being lost in a crash off the NSW coast in June 1971), by June 1973. It was widely reported that many aircrews were reluctant to return the hugely popular Phantom, and suggested that they be retained to serve alongside the F-111Cs or cancel the F-111 deal altogether!

However, this was not an option and in December 1971, the Australian Government decided that it was happy with the modifications to its aircraft and requested that they be made ready for delivery. Finally on June 1st, 1973, the first six F-111Cs arrived at Amberley from Nellis after a delivery flight which saw stop-overs at California, Hawaii and American Samoa. Leading the flight was the Commanding Officer of No.82 Wing, Group Captain Jake Newham. Three other flights of six F-111s arrived on July 27th, September 28th and December 4th. RAAF F-111

operations were finally under way! But this was not to be the end of the RAAF acquiring further F-111s. Four more aircraft were delivered in 1982 as attrition replacements. These aircraft were allocated Australian serial numbers A8-109, 112, 113 and 114. The aircraft were all early A models and therefore lacked the extended wings, strengthened undercarriage of the C models but, they were suitably modified and integrated into No.82 Wing's two squadrons.

Further modification of the F-111 fleet took place between 1979/80 with four aircraft being converted to RF-111C indigenous standard, a conversion planned long ago, with sensors carried in the bomb bay, consisting of similar equipment to that in the USN's F-14 TARPS recce pod. The first such aircraft converted was A8-126, which flew in May 1979, the remaining three conversions involving F-111s A8-134, 143 and 146. The sensor package contains two television cameras, an infra-red linescan box that produced a thermographic images, a high altitude radar altimeter, two low altitude panoramic cameras, one high altitude panoramic camera and a pair of split vertical cameras.

Only two squadrons operate the F-111 since its introduction into RAAF service, Nos 1 and 6 of No.82 Wing at Amberley QLD, traditionally the home of Australia's bomber force. No.1 Squadron is the active strike outfit and has a mixed strength of twelve F-111C/Gs used in both the air-to-ground and increasingly more important maritime strike role, for which the aircraft are modified to carry the AGM-84A Harpoon. No.6 Squadron also performs the aforementioned roles when needed but has the primary role of operational training for new F-111 crews and employing the RF-111Cs in the 'recce' role. With the aircraft's problems resolved, at least to a certain extent, the RAAF settled down into routine operation practice missions and participation in American and European bombing competitions, in which on more than one occasion they walked away with the highest scores and a number of trophies made the long flight home to Amberley's crew room.

Looking to the future, it was soon realised that with the prospect of a replacement supersonic bomber, following the high purchase cost of the F-111s, was a long way off, and the success of the UK-based USAF F-111's precision Laser-Guided Bomb (LGB) attack on Libya utilising the AN/AVQ-26 Paveway pod system, the time had come for a major up-grade of RAAF examples, so that they were at least as capable as their American cousins.

The most significant addition to the RAAF fleet, since their introduction, was the installation of the Ford Aerospace Paveway Tack, in reality a precision infra-red camera system, AAQ-9 FLIR (Forward Looking Infra-Red) coupled to an AVQ-25 laser rangefinder designator, the head of which can move 180 degrees and track any object below, to the side, or even slightly above the aircraft. The whole pod is mounted in a retractable cradle which fits into the weapons bay, so allowing for high speed low level flights, where the system is at its best. For the first time RAAF



F-111Cs were able to see detailed infra-red images of targets rather than degraded radar pictures.

The fitting of Paveway changed the cockpit layout of the navigator/WSO position with the attack radar being replaced by a hooded Virtual Image Display (VID) with Cathode-Ray Tube (CRT) displays. These panels carry the radar imagery and FLIR picture. The WSO is able to control the line of sight by a hand controller. The Paveway is intended to serve three roles for the F-111: that of navigation/INS update, target identification/illumination and acquisition of non radar-significant targets. Paveway for the first time allowed F-111Cs to loft bomb, a technique long favoured by attack crews so avoiding exposure to AAA, though dive bombing or target overflight is also practiced. As it is assumed that most attacks will be with LGBs, the Weapons System Operator (WSO) fires the laser, about 10 seconds before impact, by which time the F-111C is exiting the target area. The LGBs impact the target at the illuminated sight with an error of only several meters. The whole attack is videotaped by a built-in recorder. With the attack completed the Paveway is retracted and the aircraft leaves the area in a cleaned-up configuration. But other techniques are also practiced by F-111 crews with the Paveway including: Forward Acquire which is linked to the pilot's gun-sight, Left Acquire mode stabilises the pod along the left wing and 90 degrees off the heading. Right Acquire is identical; these modes allow the operator only limited pod sightline adjustment and are basically used to locate targets of opportunity for immediate attack. Snowplow mode serves an identical purpose and maintains the pod sightline at a constant angle with respect to the terrain. Paveway can also be simply used as a Terrain Monitor which cages the pod sightline to the F-111C's velocity vector and allows the crew comparison with the Terrain Following (TF) scope.

Complete with LGBs and AIM-9M Sidewinders under its intermediate swept wings an F-111C trails behind the tailgate of a C-130 during a RAAF display

(*RAAF via Glenn Sands)

Nothing comes close in terms of power and aggression, an F-111C in its element. During wartime F-111s relocate to Northern Australia to form No.95 Contingency Strike Wing, which would also include F/A-18s and P-3 Orions

(*RAAF via Glenn Sands)



Pave Tack is equipped with a built-in computer and it is this feature which enables it to interface with numerous weapons, if compatible, such as the AGM-84 Harpoon and Paveway series of LGBs.

The first F-111C equipped with Pave Tack was A8-147, the whole conversion taking six months to complete and resulting in some minor cockpit changes, and retraining of WSO's by USAF instructors. Although problems were encountered integrating the modern digital technology into the F-111's elderly Sixties analogue systems, perseverance paid off.

As mentioned earlier maritime strike has assumed an ever increasingly important role within the RAAF and the F-111C was the natural choice for this role, due to its exceptional range, speed and weapons capability, coupled with the need to expand the F-111's role and silence its cost-counting critics. The F-111's involvement with the AGM-84A Harpoon began in July 1982, when the Aircraft Research Development Unit (ARDU)'s F-111C, A8-132 began a three month term testing the weapon at USNWC, China Lake, California. Priced at over \$A1million apiece live firings of the missile have been rare, although such is the capability of the Harpoon that the missile is also capable of being fired from RAAF's P-3 Orions, and Royal Australian Navy's FFG Class Frigates and Oberon Class submarines. Mock attacks have showed an impressive kill ratio of over 90 per cent.

The demanding nature of the F-111 missions, flying at low-level utilising the Terrain Following Radar (TFR) at 780km/h (420kt) would not be without incident, and to date six aircraft have been lost in accidents. The first was A8-136, which went down in NSW on April 28th, 1977 when an air duct failed through fatigue cracking, the result of incorrect welding, stemming from its original construction in the US. The crew safely ejected. Less than six months later, A8-133 crashed off Evans Point on September 29th, 1977, the result of multiple bird strikes, of which at least one penetrated the cockpit. Although ejecting, the escape module was outside its operating limits and the crew were killed on impact.

One year later on October 25th, 1978, A8-141 was destroyed following a wheel well fire; this is regarded as one of the most feared scenarios for crews as they have only seconds to take appropriate action to stem a major fire or assume that the problem is simply a false light cockpit indicator. A similar situation saw the fourth RAAF loss on August 24th, 1979, when A8-137 suffered a double flame-out, due to water on the runway during a its take-off run. The crew through heavy breaking attempted to stop the aircraft but were forced to eject when the F-111 left the end of the runway at over 90kts; the falling capsule came down very close to the burning aircraft, leaving a battered but otherwise unharmed crew. Seven years later on January 28th, 1986, A8-139 was lost off the coast of Nowra, NSW during a simulated maritime strike mission, and the wreckage and crew were never found despite an extensive search of the sea bed. To date the most recent loss occurred on April 2nd, 1987, when A8-128 went down near Tenterfield NSW, after a simulated radar bombing attack. Although the exact nature of the crash is



unknown it occurred during the 'escape manoeuvre' of the attack, and the pilot may have misread his altimeter. Both crew members were killed instantly and little was left of the aircraft.

Following the retirement of the final examples of F-111s from USAF squadrons, fifteen F-111Gs were delivered (FB-111A with their nuclear role removed) in September 1993. These were to carry serial numbers A8-259, 264, 265, 270, 271, 272, 274, 277, 278, 281, 282, 291, 506, 512 and 514. The G variant can be distinguished by its flattened panel ahead of the cockpit glazing; this is a result of the removal of the Astrotracker Navigation System (ANS) which was installed during their service with Strategic Air Command. The RAAF also purchased nine stored boneyard F-111s for spare parts.

The F-111Cs underwent an Avionics Update Program (AUP) similar in many respects to the USAF's Pacer Strike upgrade, a major project which saw the aircraft's analog avionics replaced with modern digital equipment. The F-111Gs had recently undergone the USAF's Pacer Strike digital upgrade program and so when the last F-111C AUP aircraft was rolled out in December 1989, the RAAF was then in the enviable position of operating an all-digital F-111 fleet.

Further F-111 upgrades are planned and under way: the F-111Cs have been re-engined with TF30-P-109s from retired USAF F-111 stocks, while the F-111Gs are being fitted with modified hybrid P-109s with the existing P-107s afterburner, so giving more thrust and engine commonality with the C model. A benefit of this will be easing the maintenance headaches of ground crews.

Boeing is upgrading the F-111G's avionics to give them greater commonality with the C's; Project Echinda will finally provide a modern EW protection suite and the ability to use stand-off missiles (AGM-142). The expansion of the Suppression of Enemy Air Defences (SEAD) role has not gone unnoticed amongst No.82 Wing's tacticians and Project 5418 seeks to acquire a stand-off weapon for use against SAM radars and littoral targets, also planned, and long overdue are F-111-capable boom air refuellers. A long-time practice of RAAF crews was to get as much IFR training on passing USAF KC-135s. One further project will be the addition of an upgraded reconnaissance capability (podded), which will be able to be fitted to any of the F-111 fleet, so alleviating some of the tasks from the hard-pressed four RF-111Cs. Up until this time the RAAF's F-111s have never flown in anger, although unconfirmed reports state that the aircraft have been placed on immediate standby over the years due to trouble with Australia's northern neighbours. During the recent Timor crisis RF-111Cs were positioned at RAAF Tindal in the Northern Territory, but were not used over the troubled

Cunningham's Gap has long been a favourite low level training feature in the Australian outback. This F-111G, as noted by the flattened panel ahead of the cockpit glazing following the removal the USAF's Astrotracker Navigation System (ANS), shows how it should be done (RAAF via Glenn Sands)

A vintage shot of two F-111s returning to Amberley having completed a mock attack-mission profile. The low speed handling to the aircraft has been praised by aircrews (RAAF via Glenn Sands)



island, although sources close to the squadron suggest that reconnaissance missions were flown immediately close to the island, resulting in a number of 'strongly worded' complaints to the Australian Government by the Indonesians. However, following the total withdrawal of the Indonesian military from the island, official overflights were commenced in order to record infrastructure problems and improve maps of the region, to aid with the humanitarian effort later implemented.

Despite never dropping a bomb in anger, global tensions have seen the F-111s of No.82 Wing placed on alert on a number of occasions to support its own armed forces and those of friendly nations.

Fighting for its Future?

Recent political thinking in Australia coupled with defence cuts have suggested that the RAAF should operate an aircraft that is common to a large operator, such as the USAF, but when focussing on the F-111 this argument is irrelevant. The RAAF is now in a unique position as the sole operator of the type, and any debates on the future of the F-111 must be used viewed as purely an Australian issue, and its strategic needs.

One of the main proposals for the current F-111 fleet is the upgrading or replacement of the attack radar and the terrain-following radar with a combined TFR/multi-mode active array radar, an Active Electronically Steered Array (ASEA) adapted from the latest series of Block 60 F-16's APG-80 or the APG-79 of the F/A-18E/F's. A relatively straightforward conversion to perform ASEA would offer an unprecedented reliability along with replacing what in reality is obsolete 1960s baseline radar technology.

One developmental benefit of the ASEA project would be the ability of the F-111C/Gs to fire the AIM-120 AMRAAM, which given the projected escalation of tensions in the region by India and China with their proposed purchased of Tu-22M-3 Backfires, and the upgrading of the Indian Air Force's, Port Blair runway in the Andamans. This would see Backfires, with their combat radius, able to enter Australian airspace and remain there for extended periods at supersonic speeds, which would find RAAF F/A-18s hard pressed to intercept these bombers. The upgraded F-111 would be a solution if this scenario becomes a reality. This raises the possibility of the F-111C (Missileer). With its exceptional endurance and payload the F-111 would be able to run down and kill cruise missiles over the sea and, if the need arose, intercept at long range, Backfires and Tu-95/142 Bears over the Indian Ocean and Timor Sea. The Missileer would be equipped with a temporary semi-conformal weapons bay pallet, which would carry AAM semi-recessed like the RAF's Tornado F3. With the palette and triple-mounted launch rails up to 12 AAMs would be an option.

The end result would be a long range, long endurance



interceptor, with 3-4 internal or semi-conformal AMRAAMS with an operating radius in excess of 1000m (1850km) without air-to-air refuelling (AAR). It is safe to assume the this proposed interceptor variant would be an unbeatable deterrent to Backfires, Tu-16 Badgers and Bears, and also be an exceptional interceptor for less sophisticated strike aircraft in the region such as MiG-23BM, Il-28/H-5 Beagles and MiG-19/J-6 Farmers. The protection of Australia's Northern airspace continues to be overlooked on a strategic level and paramount to its protection is a highly capable F-111 able to accomplish a number of possible missions. Spares for such a conversion the F-111 fleet are not considered a problem and many if not all the stored examples at Davis Monthan have been made available to RAAF technicians to salvage suitable replacement parts. By far one of the most useful roles for a Missileer F-111 would be during political tensions in the region when the game of 'baiting' each other's air defences comes into play. The current response by the RAAF would be to send F/A-18s and supporting tankers in an effort to deter probing fighters. An F-111 configured with AMRAAMs would have the ability to cover large areas of air space comfortably without the need for tanker support, so defeating the 'baiting' aircraft. In essence the RAAF Missileer would be a return to an earlier F-111 variant, the F-111B, which was intended to protect the US navy carrier battle group, but was eventually cancelled in favour of the Grumman F-14 Tomcat. It is perhaps an ironic twist of fate that, at the time, politicians were keen to cancel the purchase the of the F-111s by the RAAF following its troubled early years with the USAF, but now more than 25 years later, with the unique capabilities of the F-111 acknowledged and unmatched by the latest fighters and bombers, a new generations of politicians are keen to keep this potent bomber 'carving up the outback' for many years to come. **MAM**

RAAF crews regularly make use of passing USAF KC-135 to practice IFR. This F-111G is plugged into an ANG Stratotanker from 163rd ARW, more commonly known as the 'Grizzlies' (RAAF via Glenn Sands)

An above view of a grey camouflaged F-111 illustrates the black wing walks. The overall grey scheme is now standard throughout No.82 Wing's fleet. The vortices off the wing glove more than illustrate the g-loads required to fly through Cunningham's Gap (RAAF via Glenn Sands)



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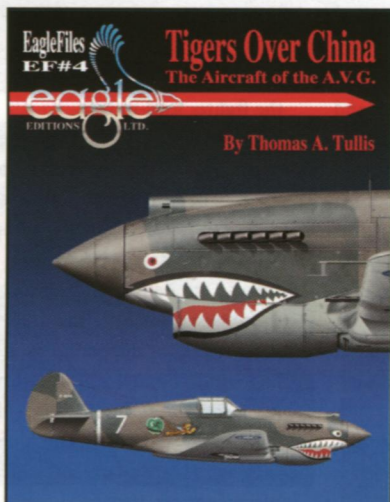
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1. An overall view of A7-005 newly overhauled and ready for redelivery to No. 76 Squadron, RAAF

The Macchi MB.326H

IN WESTERN AUSTRALIA

by Jim Grant

In November 1964 it was decided to replace the Royal Australian Air Force's de Havilland Vampire Trainers and after considering a wide selection of jet trainers it was decided to purchase the Macchi MB.326. Ultimately 85 (A7-001 to 085) were ordered for the RAAF and 12 (originally A7-088 to 097, but later changed to N14-073 to 078 and 084 to 087) for the Royal Australian Navy's Fleet Air Arm. The RAN aircraft were later transferred to the RAAF and reverted to their original serial numbers.

The Macchis first entered service with the Central Flying School then with No. 2 Flying Training School at RAAF Base Pearce in Western Australia. Nos. 2 and 5 operational Conversion units, the Aircraft Research and Development unit and the Roulettes, the RAAF's aerobatics team, also operated

the type as did Nos. 25, 76 and 79 Squadrons which used it in the fighter lead-in role.

Having been in Australian service for over thirty years there is a glorious variety of minor variations of the four basic Air Force schemes (and two Navy schemes). This article concentrates on schemes appropriate to aircraft which have operated in Western Australia. Irrespective of the colour scheme applied all aircraft had a bare metal tail pipe and by the 1990s a small polished nose cone.

Throughout the period in question the standard RAAF blue and white roundel with the superimposed red kangaroo has been applied to the fuselage sides and upper and lower wing surfaces. A red, white and blue fin flash is normally, but not invariably, carried on both sides of the fin, however size and placement can vary.

Standard Scheme One: The original RAAF scheme was painted aluminium overall; on early production aircraft, the finish had a silver sheen with a light grey top to the fin. On the leading edge of this was a fine black line which started at the bottom of the panel and ran up to just past the curve to the horizontal. Serial numbers, forward fuselage numbers, inner half of the wing tip fuel tanks and wing fences, and anti-glare panel were black. Engine air intakes and the leading edge of the tailplane were dark grey. As late as 1993 A7-095 still had the overall aluminium scheme with No. 25 Squadron's insignia without the yellow in the band.

Standard Scheme Two: This was replaced by an orange and white scheme, sometimes referred to as the 'Fanta' scheme. The

2. Port side of A7-005





3. Close-up of forward fuselage and nosewheel with anti-spray hood

4. Canopy and air intake

5. Detail of the strobe light and radio aerial

6. Rear fuselage, tail unit and exhaust outlet

7. Starboard wing tip fuel tank



8. The wingless fuselage of A7-041 of No. 79 Squadron. The orange/yellow arrowhead design is carried on other parts of the aircraft



9. No. 79 Squadron's arrowhead as presented on the upper wing



10. Detail of the nose section of A7-041



11. Fin and rudder with No. 79 Squadron's insignia. The bottom of the arrow carries on over the tailplane



12. Fin and rudder with No. 79 Squadron's insignia. The bottom of the arrow carries on over the tailplane



13. Starboard wing prepared for reattachment. Note upper and lower flanges



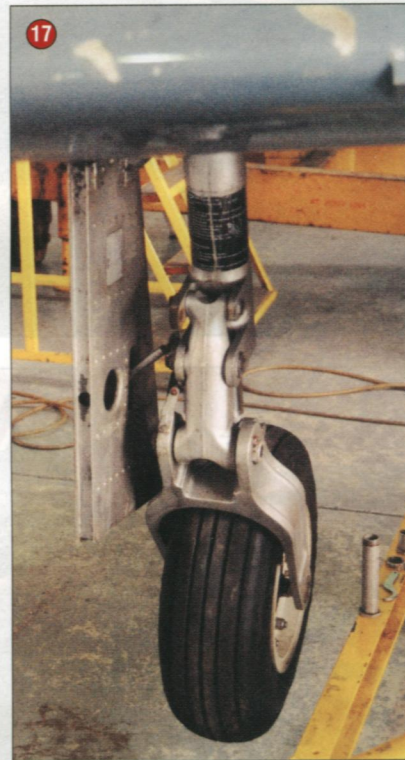
14. Port wing flap



15. Starboard fence and fuel tank



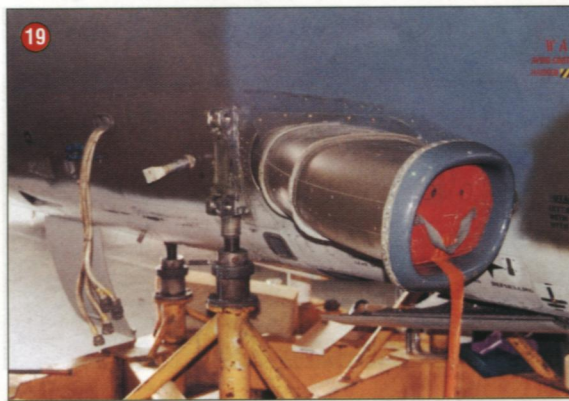
16. Fuel tank with details of attachment points



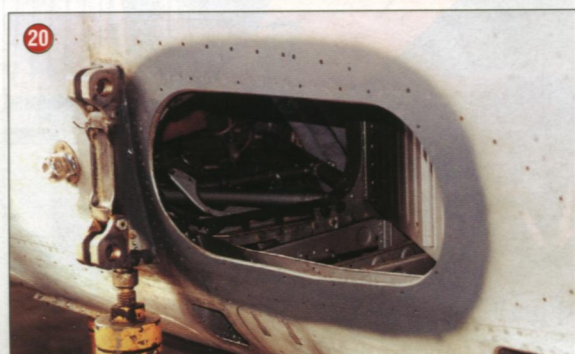
17. Port undercarriage leg, wheel and door



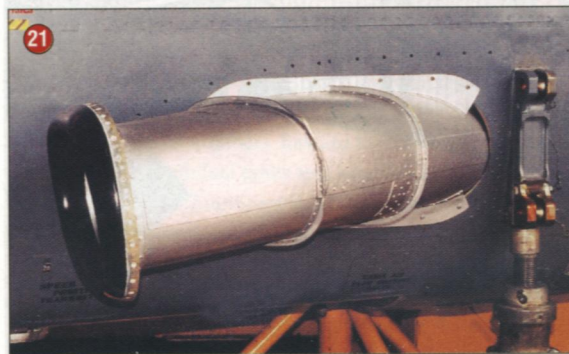
18. Starboard undercarriage leg, wheel and door



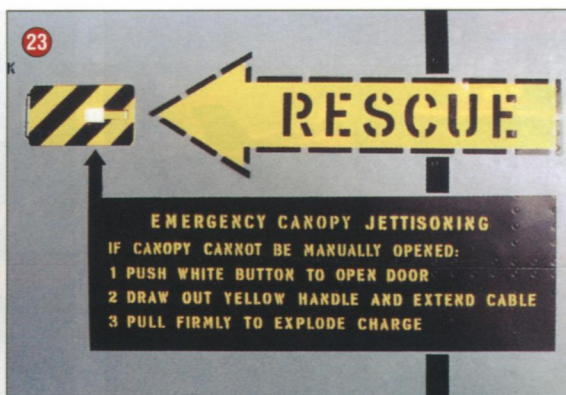
19. Starboard air intake for the Bristol-Siddeley Viper 11



20. Access to fuselage for the starboard air intakes



21. Port air intake, in silver primer

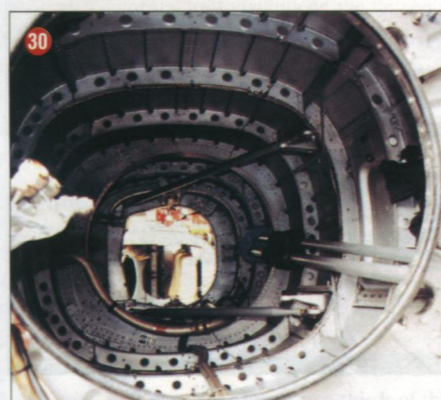
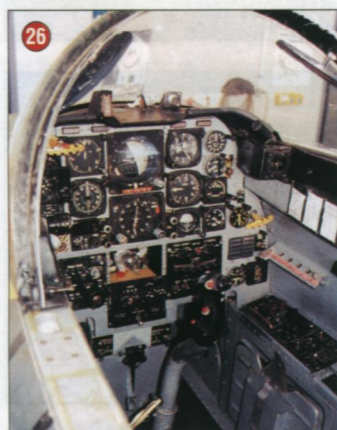
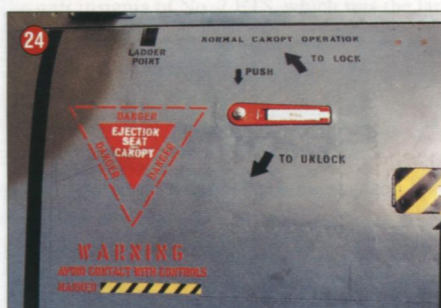


22. Mobile rack for specialised maintenance tools used on Macchi MB.329s

23. Emergency canopy jettisoning panel with rescue instructions

24. Various stencilled instructions on the port side of the fuselage

25. Stencilling on the nosewheel door



26. Front cockpit instrument panel

27. Canopy in open position

28. Open inspection panels

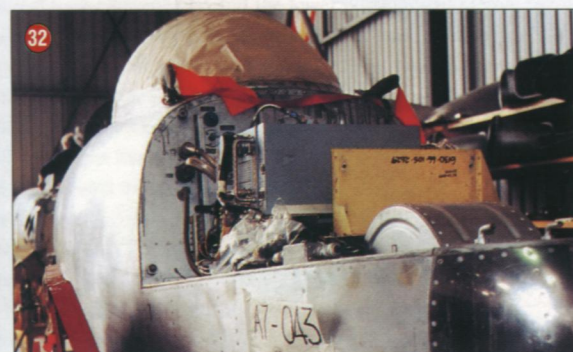
29. Starboard panel, flaps and stencil

30. Inside of the centre fuselage section

31. A7-040, nose housing electrical and electronic equipment

32. A7-043 electronic equipment housed in the nose

33. A newly refurbished rear fuselage section





34. Five Roulettes aircraft in a simple formation (Courtesy RAAF)

35. A7-026, a Roulettes aircraft (Courtesy RAAF)

36. A7-005 of ARDU. This is the standard 'Fanta' scheme with the exception of the grey rudder which was occasionally seen on these aircraft. The black-outlined rectangle appears on both wings and was carried on all aircraft (Courtesy RAAF)

37. A7-027, another 'Fanta' aircraft. This one has a white-outlined panel just behind the canopy (courtesy RAAF)

38. A7-002 clearly displaying the original colour scheme and the 'stencil' style markings carried on early production aircraft (Courtesy RAAF)

39. A7-001 with the minimal markings of the Telstar aerobatic team (Courtesy RAAF)

40. A7-090 a late production aircraft in the same colour scheme as 026

41 & 42. A7-002 wearing the squadron's original camouflage scheme and markings on the fin. This is the alternative colour scheme used by No. 25 Squadron



fuselage was orange with a white band in the centre, the fin and rudder were orange with a light grey panel on the top of the fin and the upper wing surfaces were white with the front third orange. The bottom of the fuselage, the undersurface of the wings and the tailplane were painted aluminium. Serial numbers, forward fuselage numbers, inner half of the wing tip tanks and the wing fences and anti-glare panel were black. Both upper and lower surfaces of the elevators, flaps and ailerons were painted aluminium. Aircraft in this scheme normally had a narrow dark grey protective strip along the leading edge of the wing. On some aircraft the 'last two' numbers of the serial appeared in black on the outer edge of the upper surface of the flaps.

The unit insignia of No. 2 FTS, which was the largest operator of the type, was a large black-outlined white disk with the unit's 'torch of learning', a grey and silver torch with red and yellow flames, with a superimposed black swan, the symbol of Western Australia, on the fin and rudder.

Aircraft commonly, but not invariably, had the last two numbers of the serial as large black numbers on the forward fuselage, and in the case of painted aluminium aircraft at least, six aircraft, A7-001, 004, 006, 016, 019 and 025 have been photographed with stencilled numbers in this position.

Orange and white aircraft frequently had the engine intakes painted orange on upper and lower surfaces, and occasionally this band was extended to meet the flaps.

The Roulettes' scheme was very similar to the standard orange/white training scheme but with the upper orange band tapering to a point as it reached the base of the fin and the lower band curved up to meet the leading edge of the tailplane. A large stylised red letter 'R' is applied to both sides of the fin and rudder with red, white and blue fin flash below this. At one stage an Australian flag with the words 'RAAF AEROBATIC TEAM' in roundel blue appeared on both sides of the fuselage. Aircraft in this scheme were also used by No. 2 FTS with the Roulettes' insignia removed from the fin and rudder and from the fuselage where appropriate.

Just prior to the replacement of the Macchis by the Pilatus PC-9/A Macchi A7-088, a No. 2 FTS aircraft in the Roulettes' scheme had the normal unit insignia on the fin replaced by a grey/green representation of the State of Western Australia, with a black swan climbing for the sky followed by two small black Macchis. On the fuselage, just aft of the rear cockpit, was a black '2' followed by FTS in the merging yellow, orange and red colours followed by 1969-1991 in black in smaller letters.

In 1990 No. 25 (City of Perth) Squadron was reactivated as a flying squadron to function as a lead-in-fighter unit. It was issued with former No. 2 FTS aircraft and inherited their colour schemes, including the modified one of the Roulettes.

Standard Scheme Three: The squadron began repainting their aircraft in the camouflage scheme applied to 'fighter' aircraft. The upper surfaces are Dark Sea Grey and Olive Green with light grey undersurfaces. The upper two-thirds of the wing tip fuel tanks are camouflaged and the lower portion is light grey. On both the fuselage and tip tanks the upper and lower colours are divided by a wavy line. The serial and 'last two' on the top of the fin are in white. This location, rather than on the forward fuselage, is normal on camouflaged aircraft irrespective of the unit. While fin numbers normally follow the style of the serial number, at least three aircraft, A7-010, 025 and 064, had stencil numbers at one time. The anti-glare panel is black. At one stage some No. 25 Squadron aircraft had the words 'RAAF Reserve' in small letters above the fuselage roundels.

The new squadron insignia initially consisted of two black bands with a black outlined circle containing a black swan with a red beak over black waves. The substantive insignia of the

squadron, as applied to camouflaged aircraft, was a black-edged yellow stripe across the fin and rudder. Superimposed in the middle of this is a black-edged white disk containing a black swan with a yellow eye and red beak sitting on three blue wavy lines representing water.

Standard Scheme Four: The last scheme applied to the Macchi is an overall Dark Sea Grey with white serial and tail numbers with a black protective strip on the leading edge of the wing.

When the overall dark grey scheme was introduced the squadron insignia was changed back to two black lines and the black swan within a black circle, all on the grey background. Later No. 25 Squadron aircraft had large yellow arrowheads applied to the upper wing, forward fuselage and down the fin/rudder to spill over the tailplane. These were added to increase in-flight visibility. These markings were retained when No. 25 Squadron returned to non-flying status and its aircraft were transferred to No. 79 Squadron when it was reformed in 1998. No. 79 Squadron removed No. 25 insignia and replaced this with a yellow and black skull. This unit is still based at RAAF Pearce.

As is so often the case with long-serving aircraft most Australian Macchis have not only been painted in more than one standard colour scheme, they have regularly shown a tendency for aircraft within a unit to display small but interesting variations. **MAM**

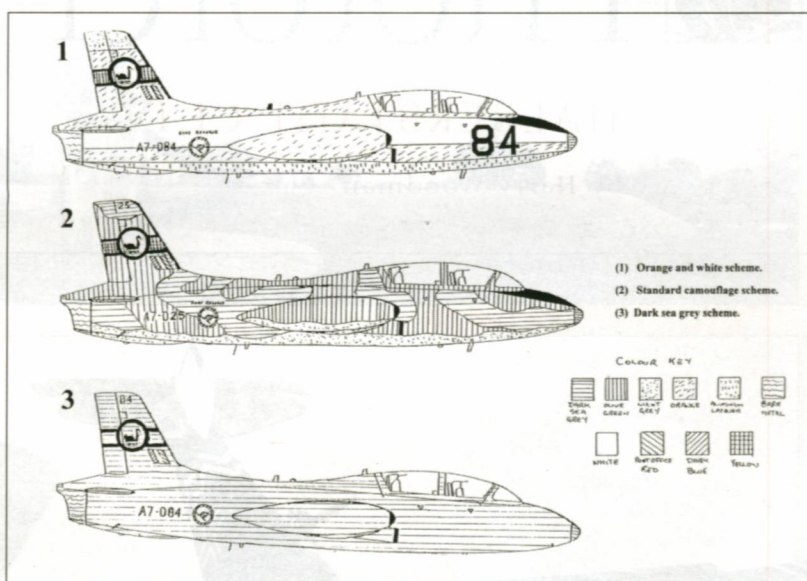
Kits & Decals Available

Supermodel 1/72nd (a lovely kit)

ESCI 1/48th.

Decals for Nos. 25, 76 and 79 squadrons are available from Halo Decals (e-mail seacodes@hotmail.net.au).

Roo Decals also produced a comprehensive sheet of decals.



Colour References:

- Light Orange (BS 381c) 557
- Aluminium (FSD 595a) 17178
- Dark Green (BS 381c) 641
- Dark Sea Grey (BS 381c) 638
- Light Grey (FSD 595a) 16492

Sources:

Air Force News (March 1999)
Vampire, Macchi and Iroquois in Australian Service by Stewart Wilson.
Additional data and drawings supplied by Mike Mirkovic
RAAF and RAN Macchis by P O'Rourke and B Moore.

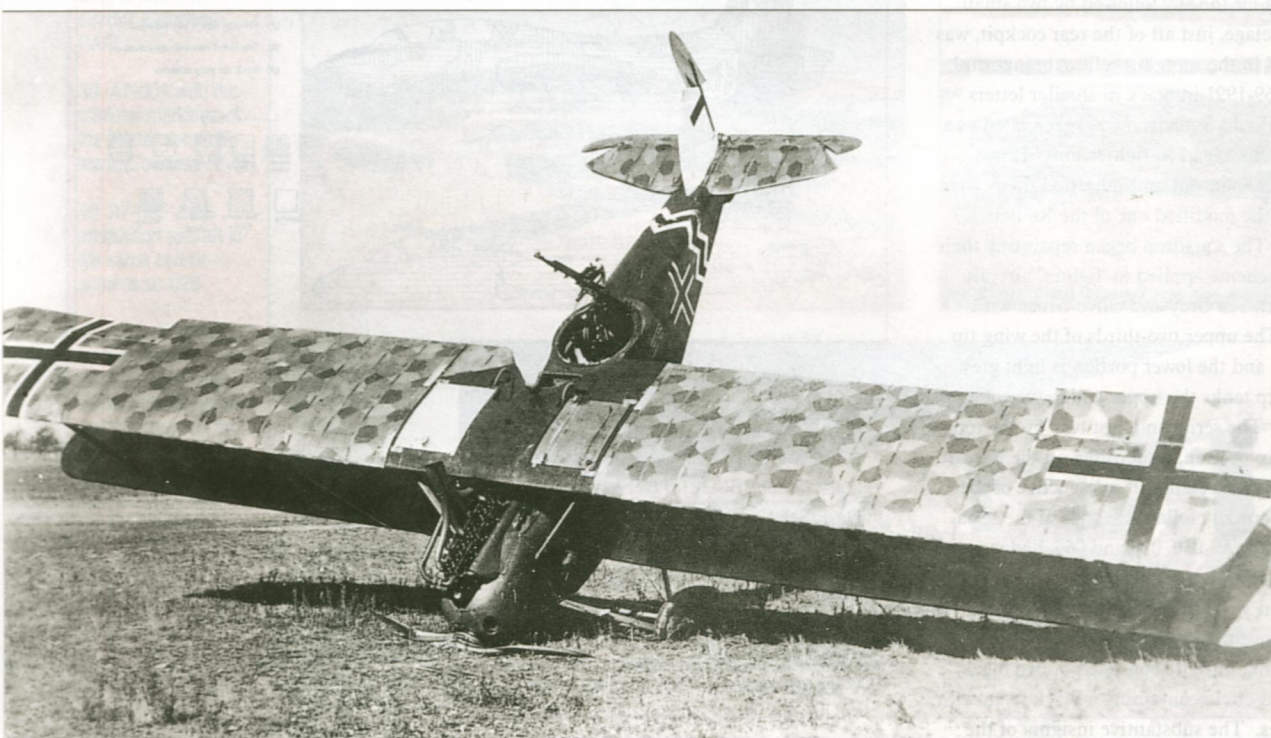


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HALBERSTADT CI.IV

by Harry Woodman

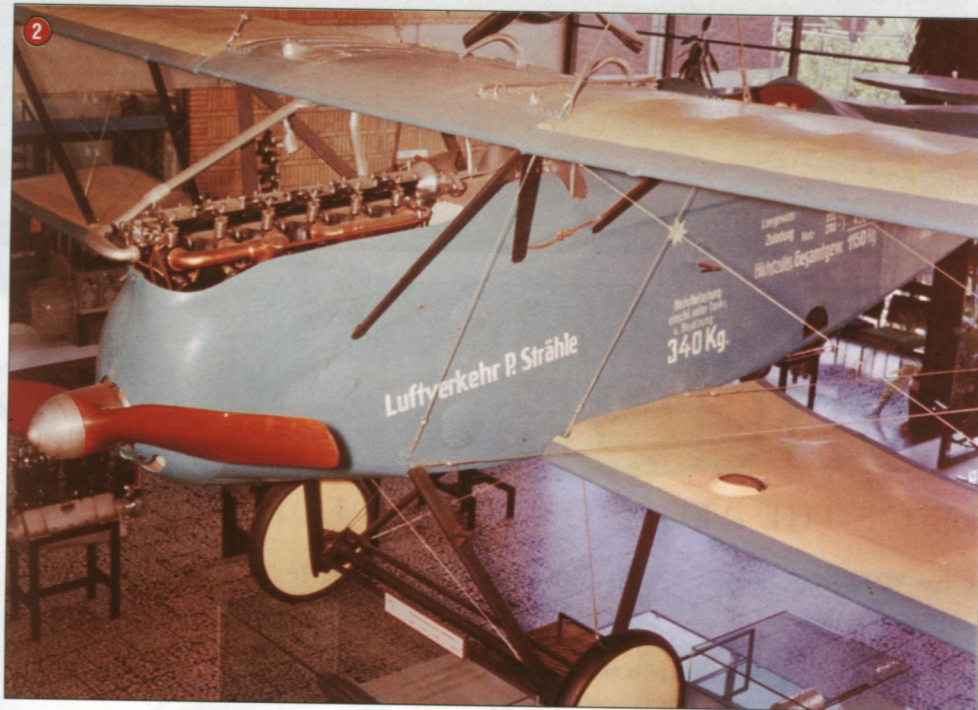
This is a close-up of the rear gun ring and Parabellum M14/17 (note the empty belt) of a Halberstadt CI.II. The wooden ring and mount was the same as that fitted to the CI.IV and may be useful reference to modellers. The large single cockpit was retained in the CI.IV but abandoned in the C.V



This is actually a Halberstadt C.V, a development of the IV and specifically designed for high-altitude, long distance reconnaissance and photographic work. Obvious differences include the greater span which had two bays of struts and a 220hp Benz Bz.IV (high compression) engine. It is shown here merely to illustrate the method of applying the printed fabric to the wings. Taken in bright sunlight the pattern on this fairly new machine (the type did not appear at the Front until late Summer of 1918 in numbers) is still sharp. Note the bright NKF radiator on the starboard side and the reserve fuel tank on the other side



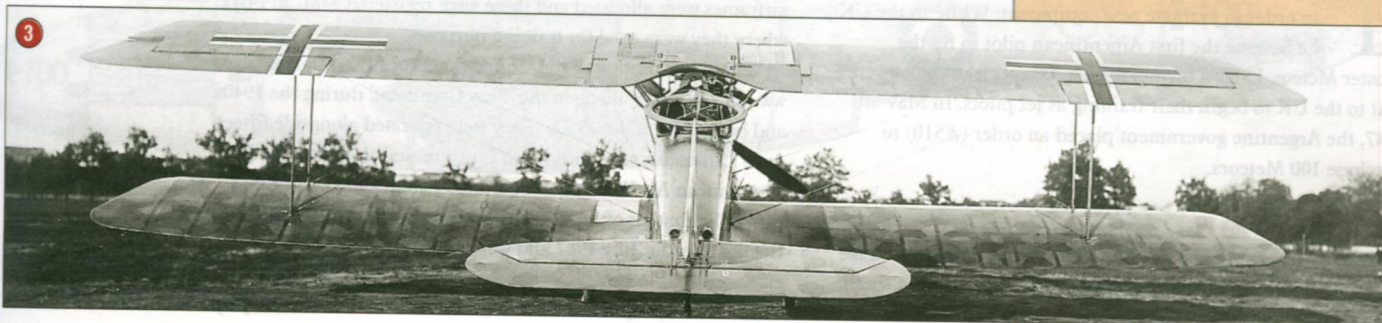
1. A three-quarter view of the same aircraft showing the exhaust of the 160hp Mercedes D.III engine and the underside of the NKf radiator



2. This surviving Cl.IV hangs in the Daimler-Benz museum at Stuttgart. It was owned by Paul Strähle, one time commander of Jasta 57 and 18. It was converted to carry two passengers and used by him to establish one of the first commercial air services in Germany in January 1921 (© Peter Kilduff)

3. An exact rearview of 8171/18; the fuselage appears to have been sprayed in two colours possibly brown and green, the overall effect is subdued and dark as is the lozenge fabric. Modellers should note that the printed fabrics were overpainted with protective coats which darkened the colours. Some models look as if they were covered in 1960s wallpaper. Note the 'wash-out' towards the tips of both wings, this feature very common on many German aircraft is frequently overlooked by modellers and manufacturers

4. A factory fresh Halberstadt Cl.IV built by sub-contractor LFG Roland, serial 8171/18. This is one of a group of LFG factory photos, which shows up the detail quite clearly (nothing ever surpassed the glass plate negative for fine detail). Note the weights table and the airframe serial applied to struts and undercarriage unit. The rear gun is not fitted but the flaglike item attached to the gun ring was one of several attempts to employ the slipstream to assist in turning the gun into wind. Such items never caught on and were probably disliked by observers





'El Bólido'

THE METEORS OF THE ARGENTINIAN AIR FORCE

Story and profiles by *Diego F. Rojas *2001, photos by Mr Cicales

This history starts at the beginning of 1947 when 1st Lt. Edmundo Weiss, a test pilot, was sent to the UK in order to evaluate new equipment. While in the UK he became the first Argentinean pilot to fly the Gloster Meteor. Later a further eleven Argentinean pilots were sent to the UK to begin their training as jet pilots. In May of 1947, the Argentine government placed an order (#510) to purchase 100 Meteors.

Gloster Meteor F Mk IV

The Meteors were offered via Evans Thornton Company and the total cost of the purchase amounted £4,066,800, a far from small sum at this time! Clauses imposed on the purchase of these aircraft by the British government meant that the Argentinean Air Force was not allowed to sell, transfer or re-export these aircraft to other countries. Later the government added an additional clause (#1) whereby Gloster guaranteed its aircraft against manufacturing flaws for six months or 100 flying hours.

In addition to the supply of these aircraft it was undertaken that all the updates incorporated in RAF airframes would also be incorporated in those supplied to Argentina. Gloster supplied the aircraft in six lots, and the contract specified that these airframes would be newly built by Gloster for the Argentinean Air Force. This was not the case however, as the first 50 were from RAF stock.

The Argentinean Commission in England established itself in the War Veteran's Hotel in Cheltenham, near the airfield at Moreton Valence (Gloucestershire), where it would instruct the new pilots and the ground crew. At Moreton Valence the pilots had the chance to fly an Avro Anson, as well as the de Havilland D.H.104 Dove and, finally, the Gloster Meteor F Mk III. The latter type was used so the the pilots could get used to a two-engine aircraft, as well as learning the technique of landing an aircraft fitted with a tricycle undercarriage.

The RAF Meteor F Mk IIIs assigned were EE367, EE460 and

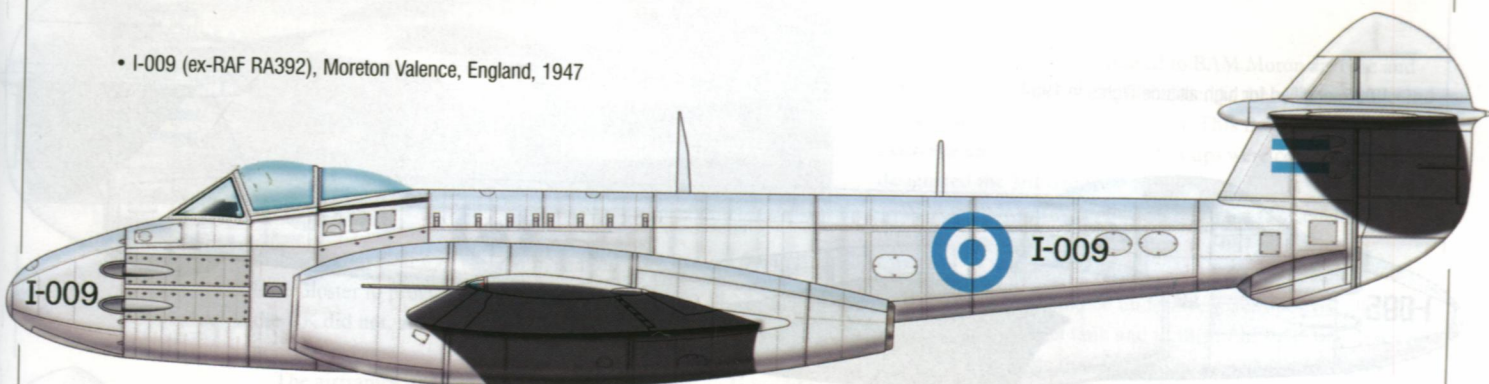
EE470. Each pilot made at least twelve flights completing 10 flying hours in these aircraft. By June 6th, 1947 six Argentinean airframes were allocated and these were registered I-007 to I-012 where they were used for training purposes.

With the exception of the United States of America, Argentina was the only user of jets in the 'New Continent' during the 1940s and beginning of the 1950s. They were operated alongside fifteen Avro Lancasters and thirty Avro Lincolns and they gave the Argentinean Air Force an extraordinary strategic power at that time. The first lot of six aircraft (I-001 to I-006) arrived by sea at Buenos Aires in July 1947 and were assembled by British engineers and technicians. Test flights of these aircraft were undertaken by Sqn Ldr W. A. 'Bill' Waterton. At 1100hrs on July 11th I-005 took-off with Sqn Ldr Waterton at the controls and thereby became the first jet to fly in Argentina. The first flight of an Argentinean pilot was undertaken by Lt. Manuwal on the 15th July, when he flew over the El Palomar air base.

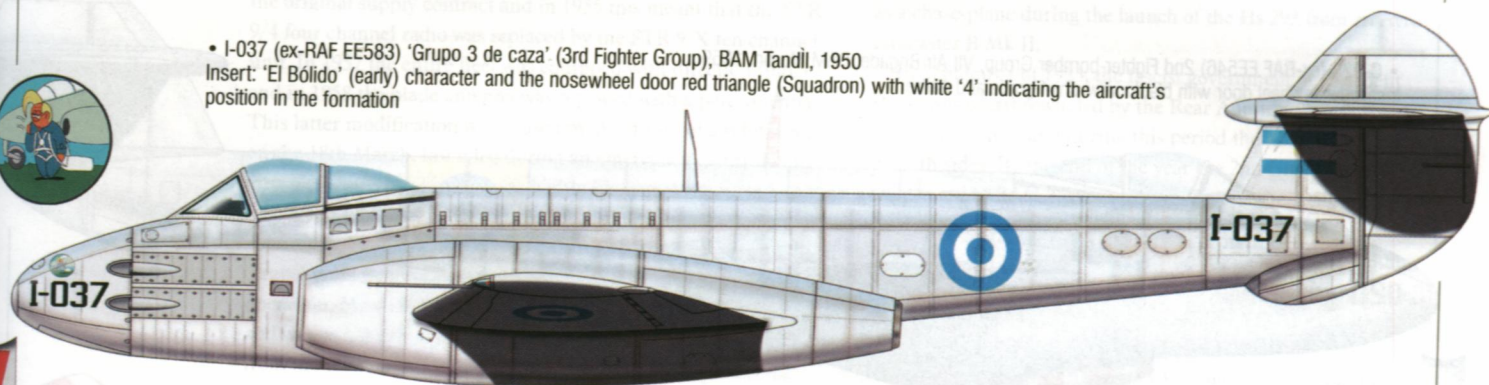
Throughout September 1948 assembly of the rest of Meteors was completed. At this point the first modifications were made and consisted of the replacement of the control column and the instruments and the substitution of the gunsight in the first 50 aircraft. The latter item was fitted with an explosive charge that could be detonated by the pilots to ensure this item did not fall into enemy hands, although this was, in reality, both dangerous and unnecessary. When these aircraft were put into service it was



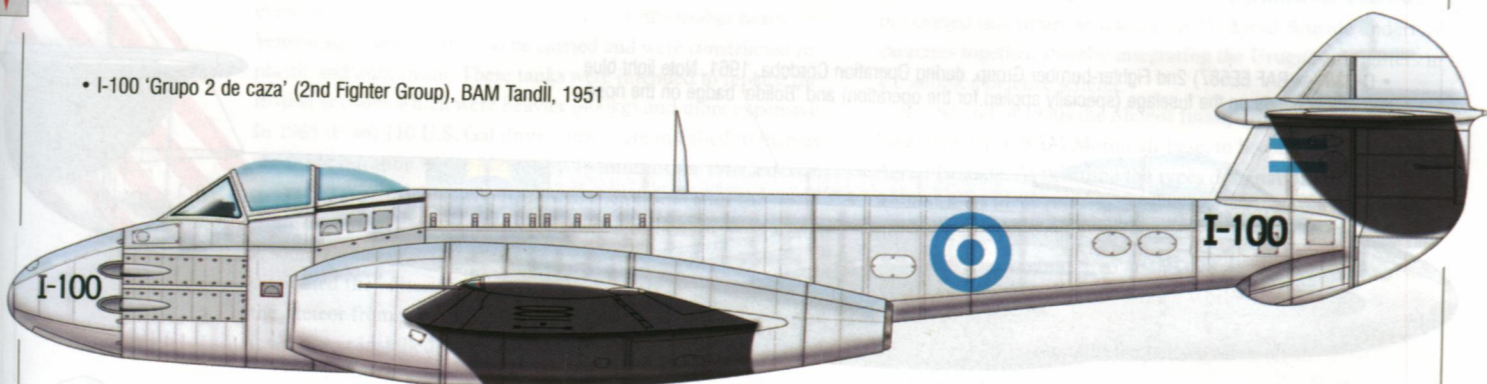
- I-009 (ex-RAF RA392), Moreton Valence, England, 1947



- I-037 (ex-RAF EE583) 'Grupo 3 de caza' (3rd Fighter Group), BAM Tandil, 1950
Insert: 'El Bólido' (early) character and the nosewheel door red triangle (Squadron) with white '4' indicating the aircraft's position in the formation



- I-100 'Grupo 2 de caza' (2nd Fighter Group), BAM Tandil, 1951



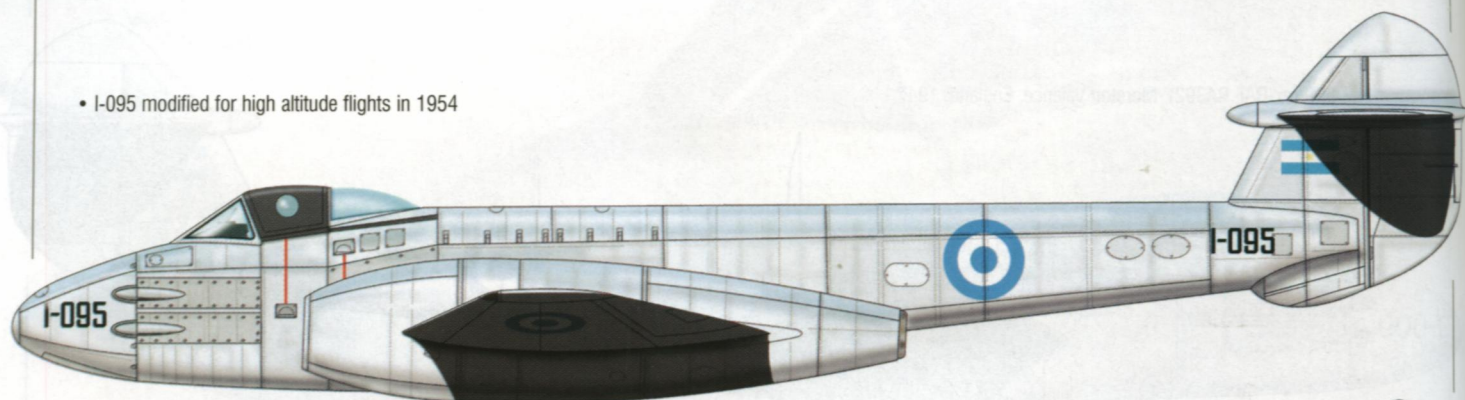
- I-043 (ex-RAF EE541) 'Movimiento Revolucionario', September 16/17, 1955



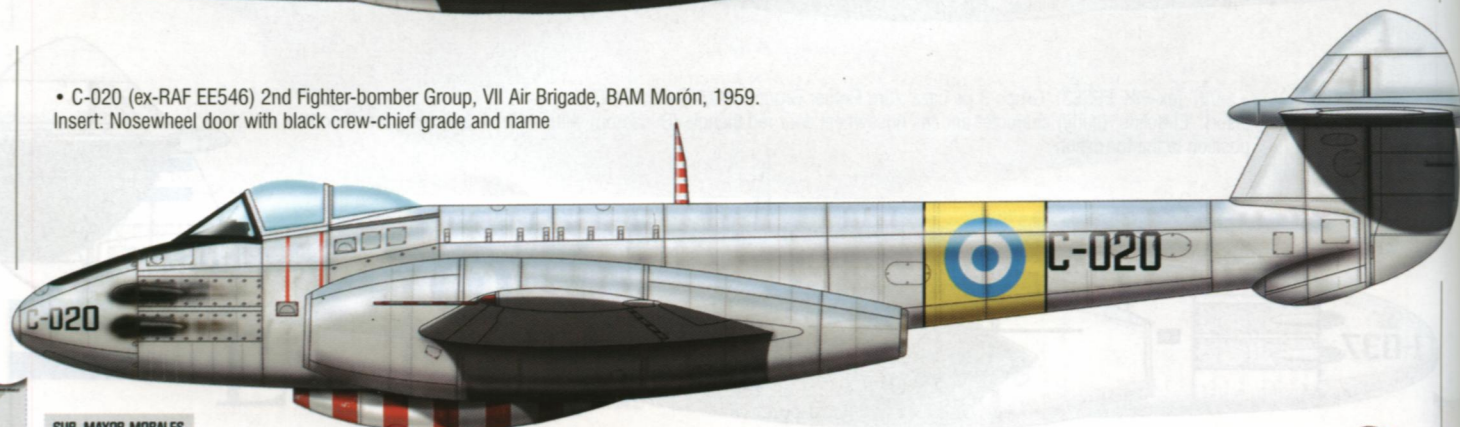
- I-056 modified in 1958 for high altitude flights (F Mk III wings)



- I-095 modified for high altitude flights in 1954

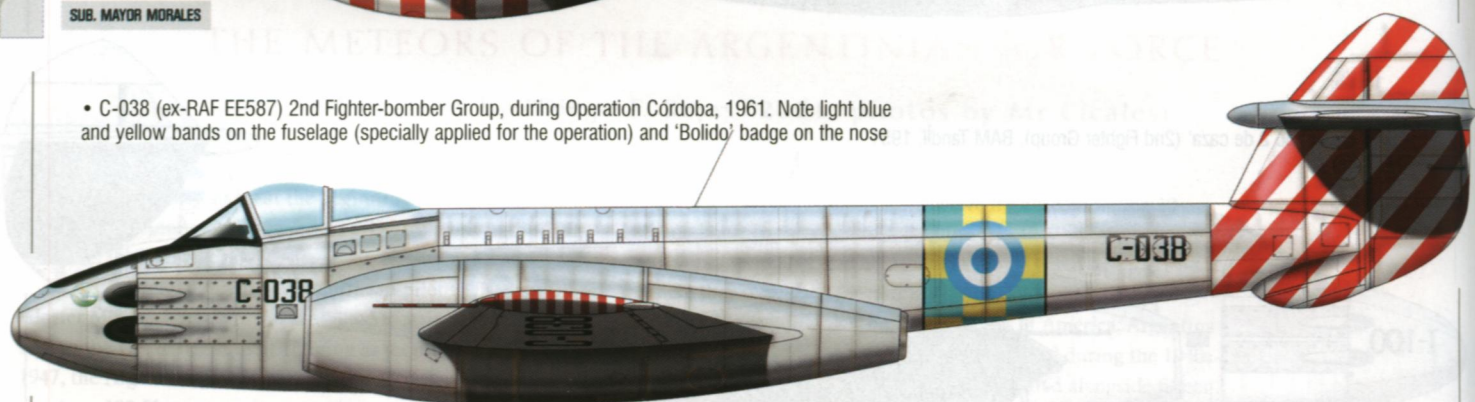


- C-020 (ex-RAF EE546) 2nd Fighter-bomber Group, VII Air Brigade, BAM Morón, 1959.
Insert: Nosewheel door with black crew-chief grade and name

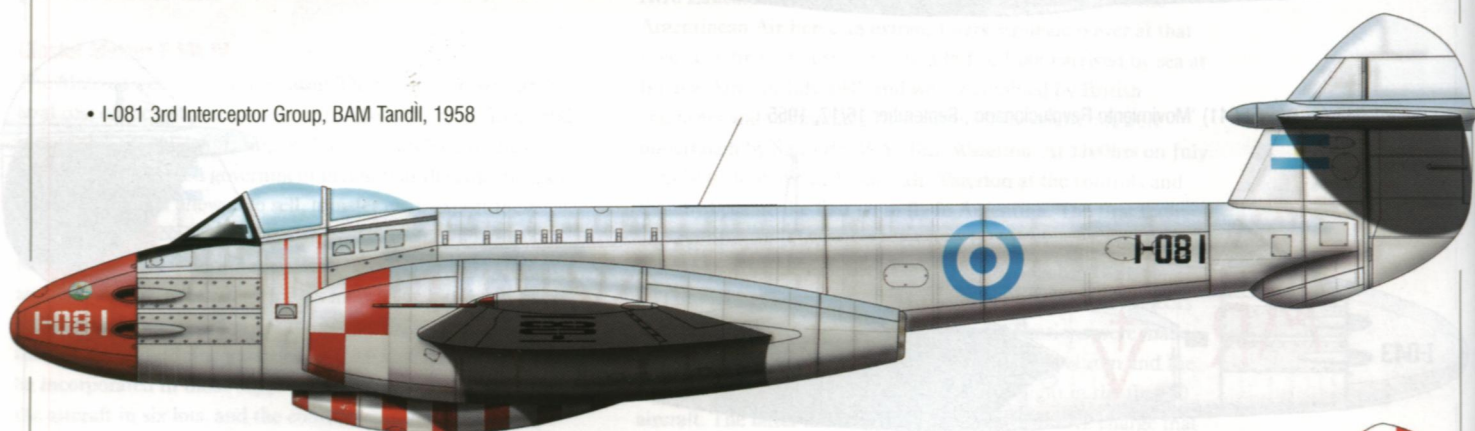


SUB. MAYOR MORALES

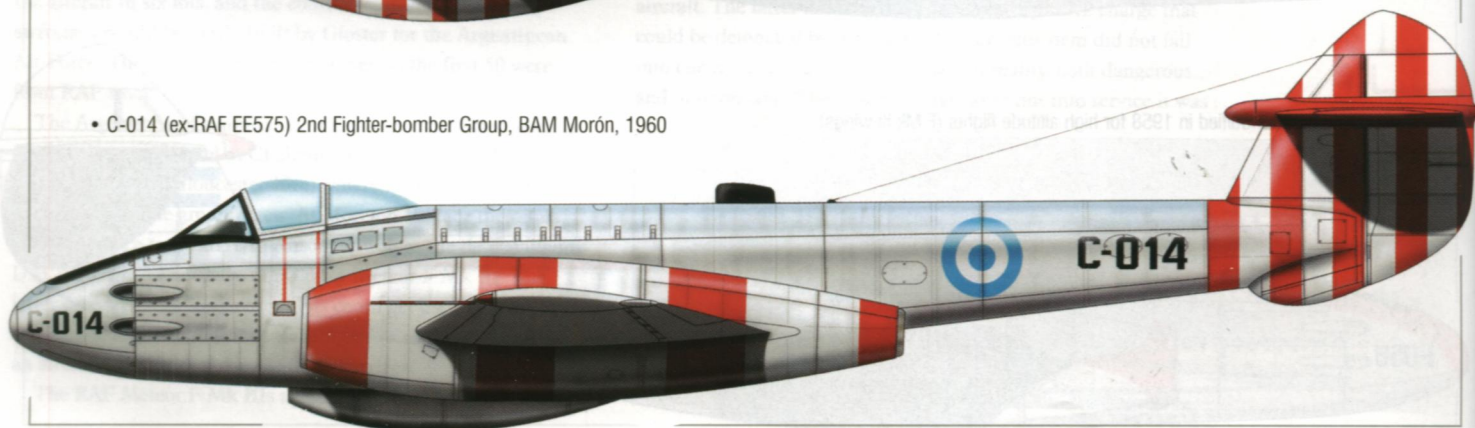
- C-038 (ex-RAF EE587) 2nd Fighter-bomber Group, during Operation Córdoba, 1961. Note light blue and yellow bands on the fuselage (specially applied for the operation) and 'Bolido' badge on the nose

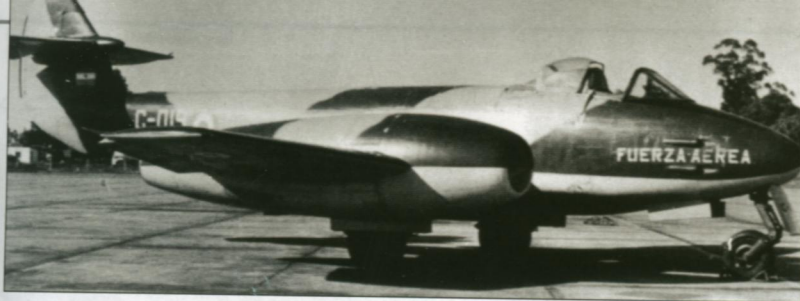


- I-081 3rd Interceptor Group, BAM Tandil, 1958



- C-014 (ex-RAF EE575) 2nd Fighter-bomber Group, BAM Morón, 1960





discovered that 50% of the 20mm cannon were defective. This lead Gloster to provide 400 used guns; the Ministry of Supply in the UK did not, at this time, authorise the sale of new guns for political reasons.

The airframes underwent a number of upgrades, in line with the original supply contract and in 1955 this meant that the STR 9/4 four channel radio was replaced by the STR 9/X ten channel unit. In 1957 the entire fleet was equipped with direction finders and in 1958 the blade antenna was replaced with a pole antenna. This latter modification was caused by the injury of a pilot who, on the 18th March, lost a leg during an emergency exit from an aircraft. This type of injury was highly likely as Meteors in Argentinean service never had ejection seats fitted.

During the course of the type's operational life several (launchable) weapon systems were evaluated and put into operation. Most of this happened towards the end of the 1950s and was as a result of a change in the intended role of the type from interceptor to fighter-bomber. The hard-points under the wings could carry general purpose bombs, NAPALM, Scar exercise rockets (2.25in) and T-10 rockets with combat heads. Ventral fuel tanks could also be carried and were constructed in plastic and aluminum. These tanks were intended to replace the British versions which were heavier (400kg) and more expensive. In 1965 (F-86) 110 U.S. Gal drops tanks were installed to increase the flight duration of the Meteor by 45 minutes. In 1969 a device (#C-057) was installed which allowed the pilot to start the engines without ground crew assistance or auxiliary equipment. It soon was discovered however that this device quickly dissipated the batteries and with the anticipated retirement of the Meteor from service (due to their accumulated flying hours) it was never installed in all airframes.

Active Service

In December 1947 the Fourth Interception Regiment (Regimiento 4 de caza interceptora - R.4Caz.) was formed at BAM Tandil (military air base). This was followed in July 1949 with the formation of the VI Aerial Brigade. Two years later Regimiento 4 and VI Aerial Brigade were redesignated 2 and 3 Group respectively for interception operations. The 2nd Group received all its aircraft in the even number serial group (e.g I-002, I-004 etc), while the 3rd Group received the 'odd' numbers (e.g I-001, I-003 etc). Each Group also had allocated at least three Focke-Wulf Fw 44Js and two de Havilland D.H.104s for logistic tasks.

In 1952 the 3rd Group moved to BAM Morón air base and formed part of the VII Aerial Brigade. At the same time the 2nd Group was also relocated to Morón. This Brigade remained in existence until 1955 when both Groups were combined and designated the 3rd Group.

With the adaptation of the ex-Luftwaffe Henschel flying bomb (Hs 293) in a project in 1953, Meteor I-087 received a belly-mounted stabiliser for the missile so that some aerodynamic tests could be undertaken. This was installed in place of the extra fuel tank and in this form I-087 was flown by Capt Di Pardo (note that during this period a great number of German scientists worked in Argentina). This aircraft also served as a chase-plane during the launch of the Hs 293 from an Avro Lancaster B Mk II.

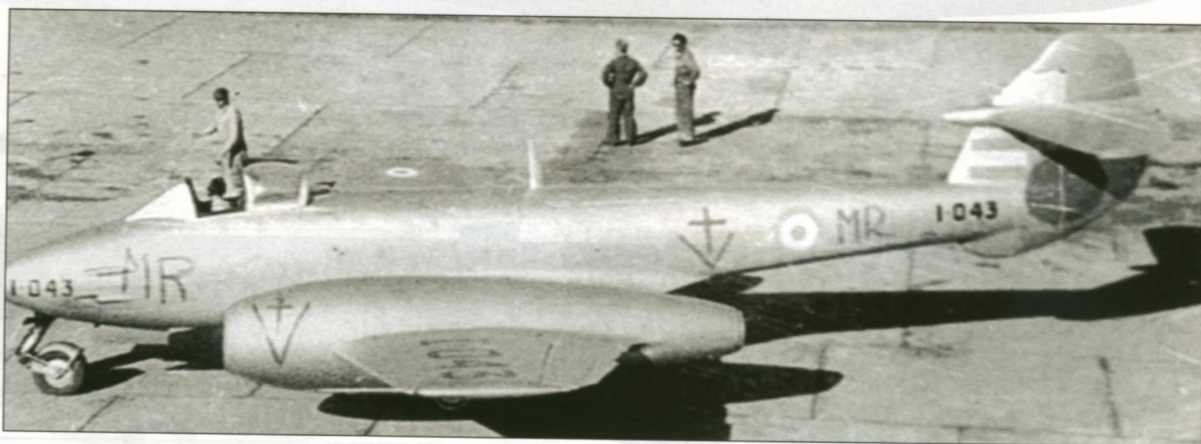
In September of 1955, the fascist government of President Peron was overthrown, led by the Rear Admiral Issac F. Rojas (my grandfather) and during this period the Meteor was operated by both sides. By the end of the year the 2nd Group was reactivated at BAM Tandil air base. During the 1950s pilots were instructed in jet aircraft operations and this allowed the transition of pilots from the Argentinean Navy to operate the Grumman F9F Panther, as well as the Chilean Air Force to operate the de Havilland Vampire and the Ecuadorian Air Force with the Gloster Meteor FR Mk 9.

In the mid-60s the Uruguayan Lockheed F-80Cs and the Meteors and the F-86Fs (Sabres of the Argentina Air Force will be covered in a future article) of the IV Aerial Brigade undertook exercises together, thereby integrating the Uruguayan fighters in a combined defence scheme.

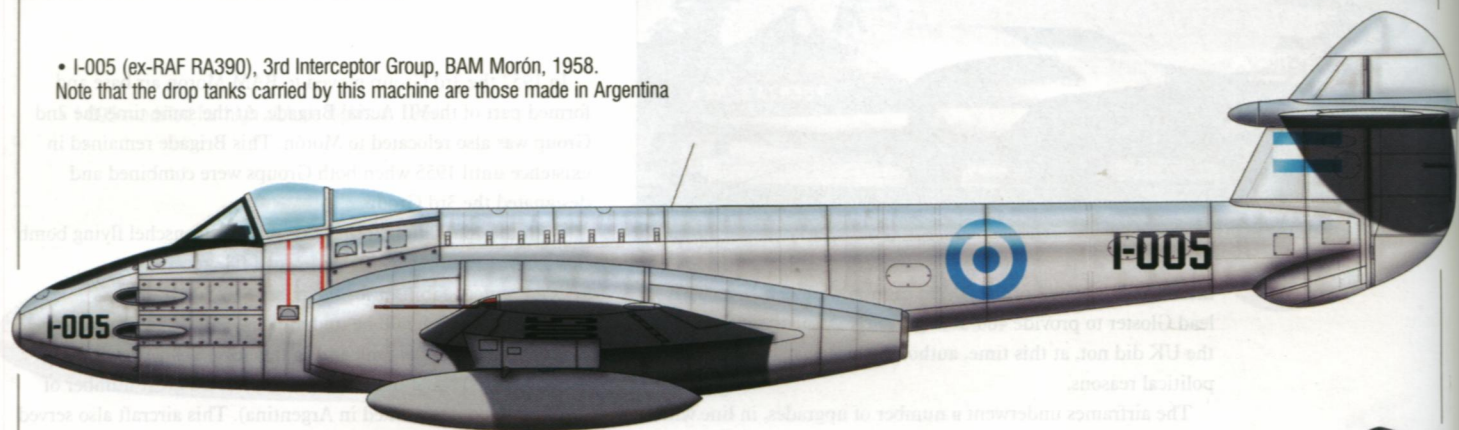
By the end of 1950s the Meteor finally left BAM Tandil air base, moving to BAM Morón air base, to become part of VII Aerial Brigade. At this time the types designation 'I' (Interceptor) was changed to 'C' (Caza-bombardero/fighter-bomber), whereby the serial numbers changed to C-001, C-002 etc. In 1971 the last fifteen Meteors were retired after 24 years of active service. Not bad for an aircraft designed during World War II!

Record Breaker

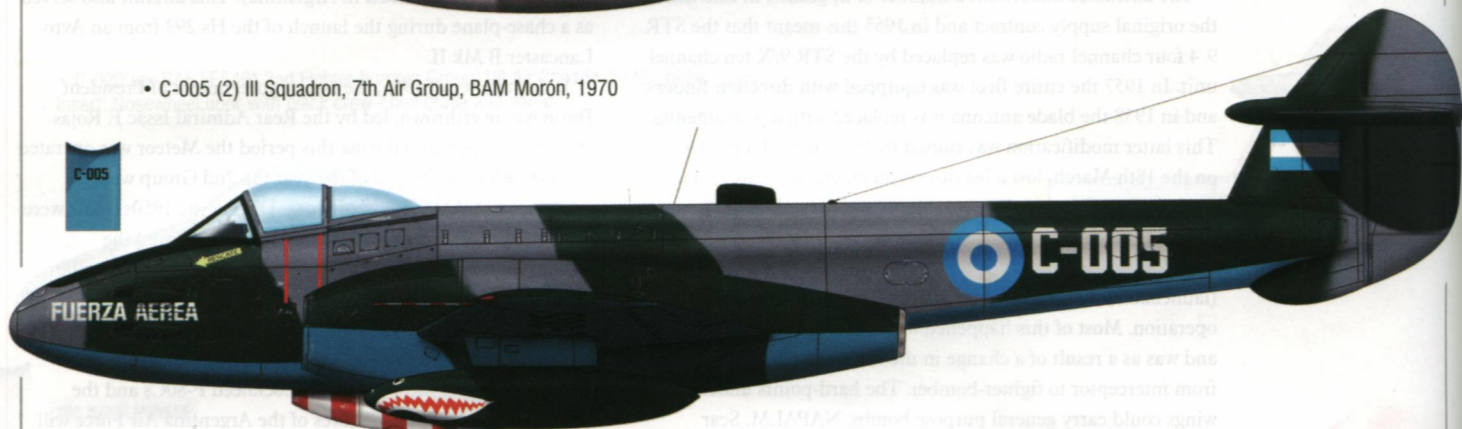
On March 25th, 1948 Lt. Zuviria at the controls of I-019 established a flight record of 19 minutes between the Morón and Tandil air bases, although this fact does not constitute a record in itself it was an important event at the time. On April 22nd of the same year Lieutenant Shepherd reached a speed of 963km/h in I-018 which was specially prepared with the guns covered and the surfaces polished to reduce drag. On July 29th, 1949 at 1700hrs 1st. Lt. Mannuwal at the controls of I-095 took-off from BAM Morón en route to BAM Tandil on a routine flight during which he reached a ceiling of 14,500m, later reaching an absolute ceiling of 15,100m. The communication between 1st Lt. Mannuwal and the control tower at Tandil were intercepted by Radio CW 1 (Radio Colonia of Uruguay), which transmitted it to



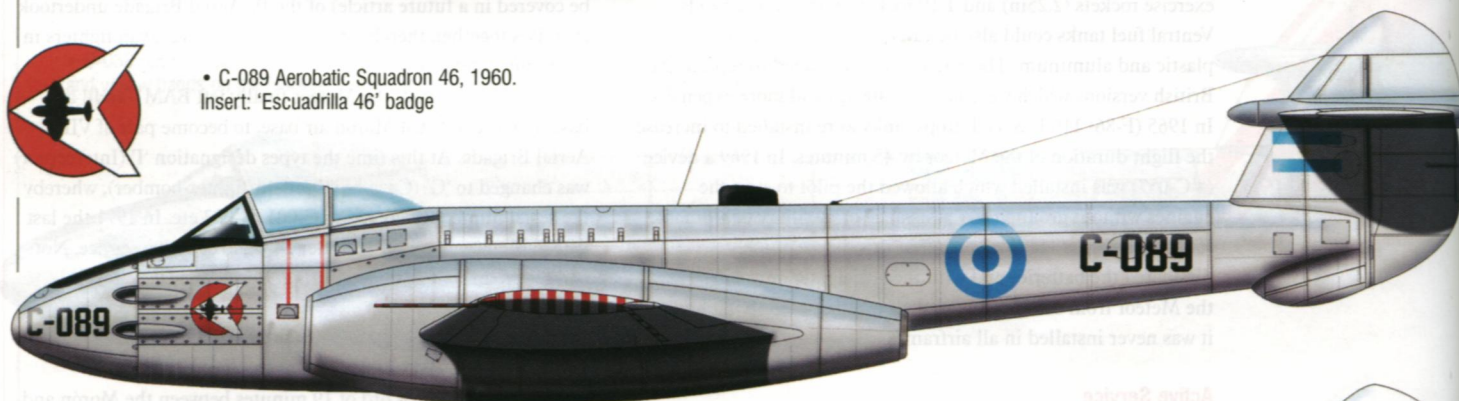
- I-005 (ex-RAF RA390), 3rd Interceptor Group, BAM Morón, 1958.
Note that the drop tanks carried by this machine are those made in Argentina



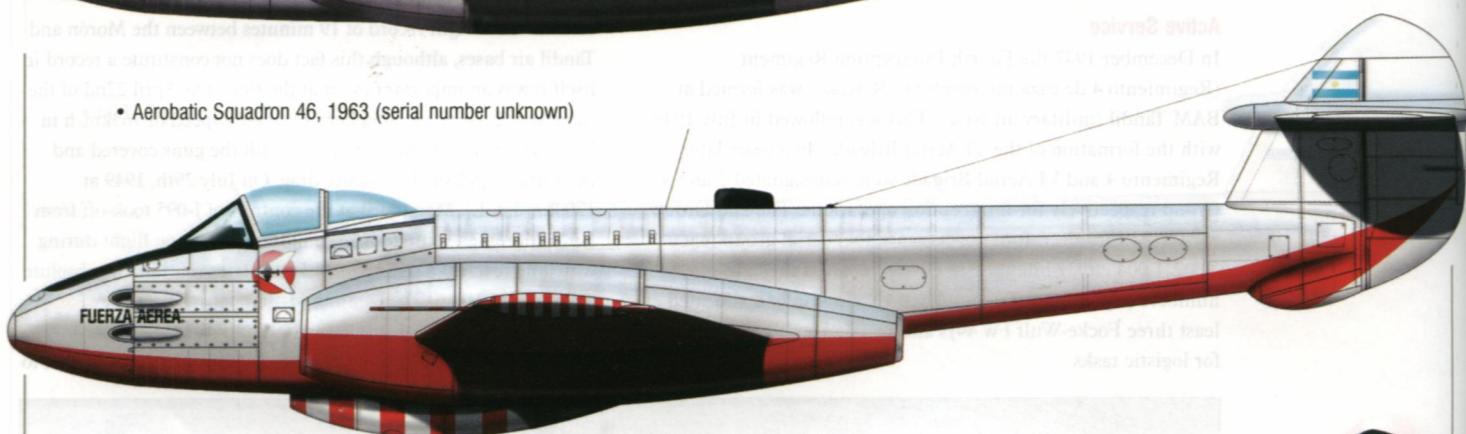
- C-005 (2) III Squadron, 7th Air Group, BAM Morón, 1970



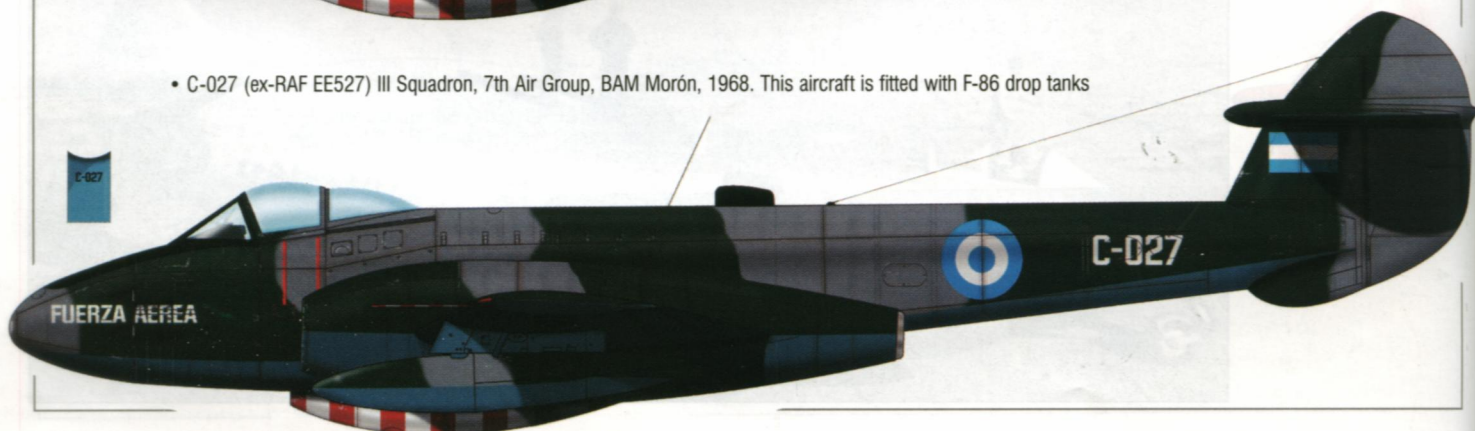
- C-089 Aerobatic Squadron 46, 1960.
Insert: 'Escuadrilla 46' badge



- Aerobatic Squadron 46, 1963 (serial number unknown)

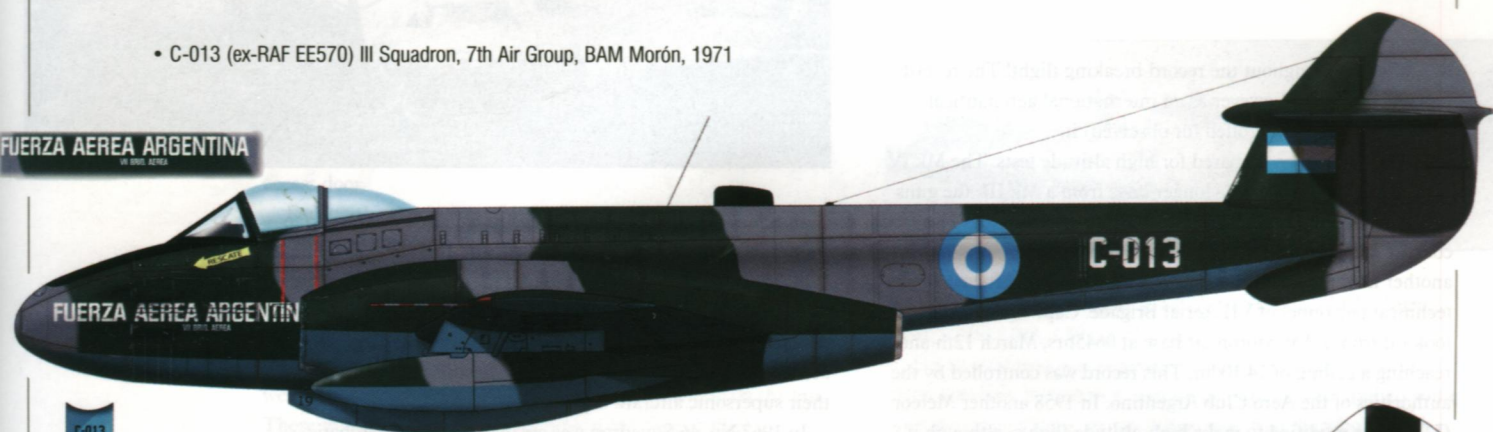


- C-027 (ex-RAF EE527) III Squadron, 7th Air Group, BAM Morón, 1968. This aircraft is fitted with F-86 drop tanks



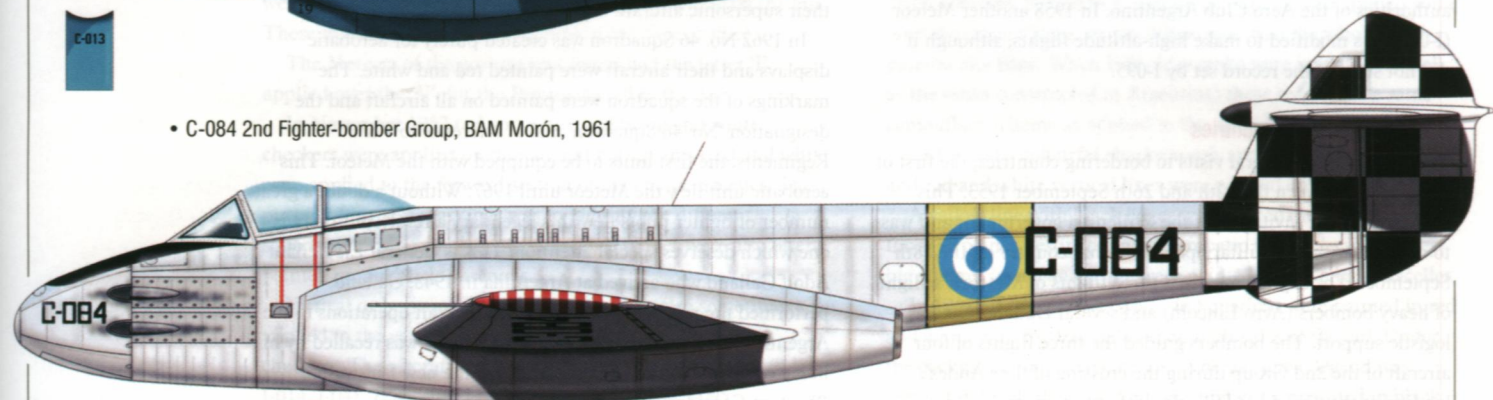
- C-013 (ex-RAF EE570) III Squadron, 7th Air Group, BAM Morón, 1971

FUERZA AEREA ARGENTINA

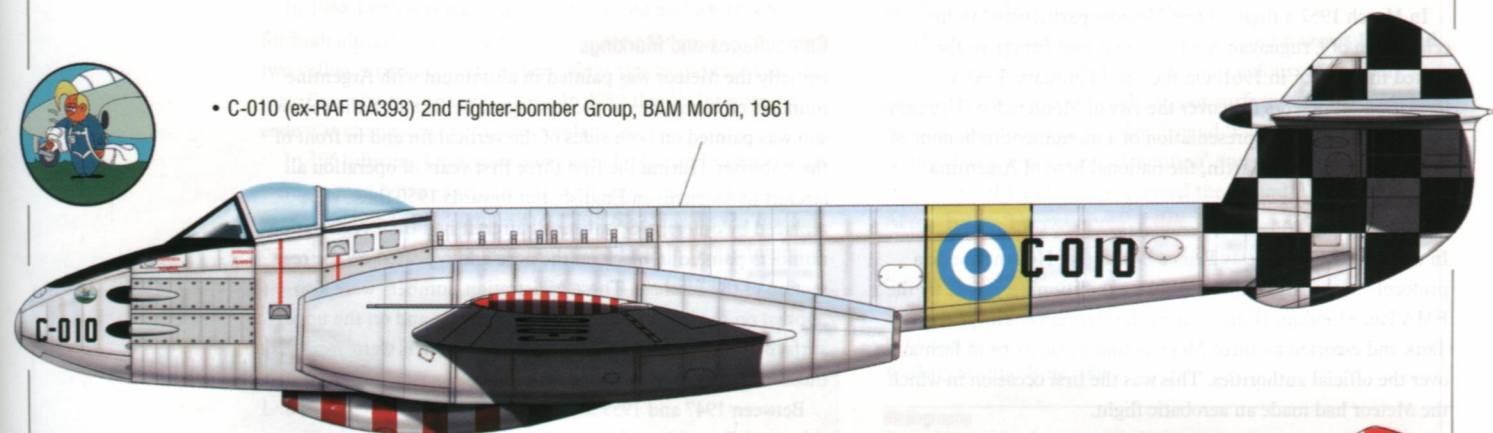


C-013

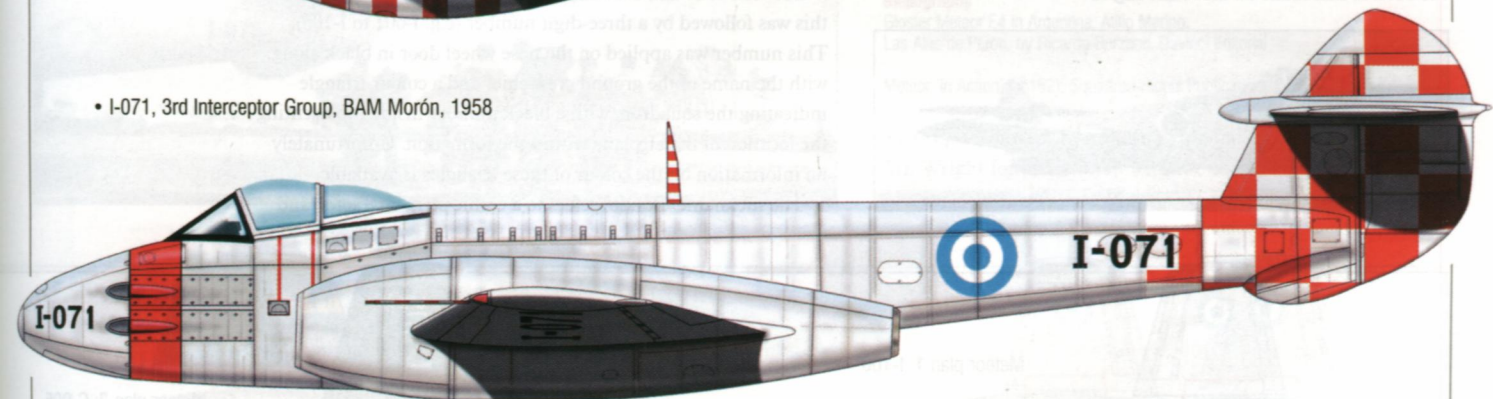
- C-084 2nd Fighter-bomber Group, BAM Morón, 1961



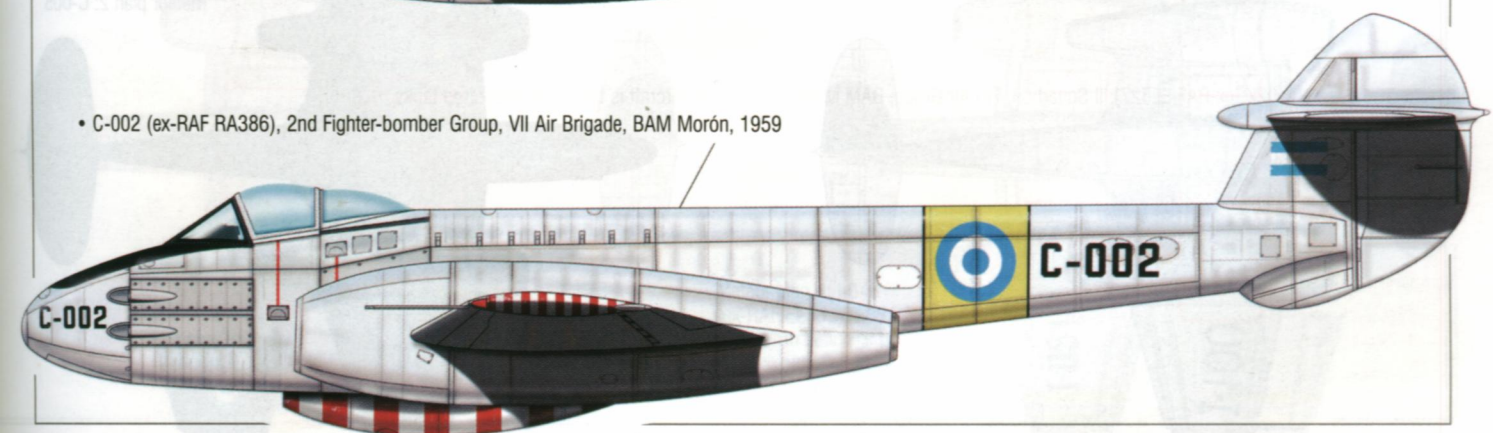
- C-010 (ex-RAF RA393) 2nd Fighter-bomber Group, BAM Morón, 1961



- I-071, 3rd Interceptor Group, BAM Morón, 1958



- C-002 (ex-RAF RA386), 2nd Fighter-bomber Group, VII Air Brigade, BAM Morón, 1959



its audience throughout the record-breaking flight! The record was not accredited however as an international aeronautical authority had not controlled (or observed) it.

In 1954 I-095 was prepared for high altitude tests. The Mk IV wings were replaced by the longer ones from a Mk III, the guns were sealed and a Lange barometer S.537 was installed. The cockpit was pressurised, replacing the transparent cupola with another made of metal that was designed and constructed by the technical personnel of VII Aerial Brigade. Capt. Quagliardi took-off from BAM Morón air base at 0645hrs, March 12th and reaching a ceiling of 14,100m. This record was controlled by the authorities of the Aero Club Argentino. In 1958 another Meteor (I-056) was modified to make high-altitude flights, although it did not surpass the record set by I-095.

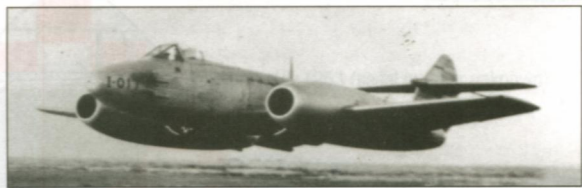
Visits to Bordering Countries

The Meteor made several visits to bordering countries, the first of them being between the 12th and 26th September 1953. This event was by the invitation of the Chilean government and was to coincide with the military parade in that country on the 18th September. The flight comprised three flights of Meteors, a flight of heavy bombers (Avro Lincoln) and several Douglas C-47 as logistic support. The bombers guided the three flights of four aircraft of the 2nd Group during the crossing of 'Los Andes', landing at the airfield at Hillocks without incident.

In March 1957 a flight of five Meteors participated in the celebration of Uruguayan Air Force Day and Paraguay also hosted the Meteor in 1961. On the 22nd February, 1963 a formation of Meteors flew over the city of Montevideo (Uruguay) on the occasion of the presentation of a monument in honour of General Jose de San Martín, the national hero of Argentina.

Aerobatic Squadron

In April 1951 His Majesty Prince Bernard of Holland made a protocol visit to Argentina. A public exhibition was made by the FMA Iae. 33 Pulqui II manned by the German engineer Kurt Tank and escorted by three Meteors that made loops in formation over the official authorities. This was the first occasion in which the Meteor had made an aerobatic flight.



In January 1952 crews were assigned from the 3rd Group to train in preparation for an aerobatic team. In 1957 the legendary 'Thunderbirds' display team brought their N.A. F-100C Super Sabres. Their demonstration on the 17th November was described by foreign press as 'spectacular' and the Argentine aerobatic pilots had nothing but envy for the USAF pilots with their supersonic aircraft!

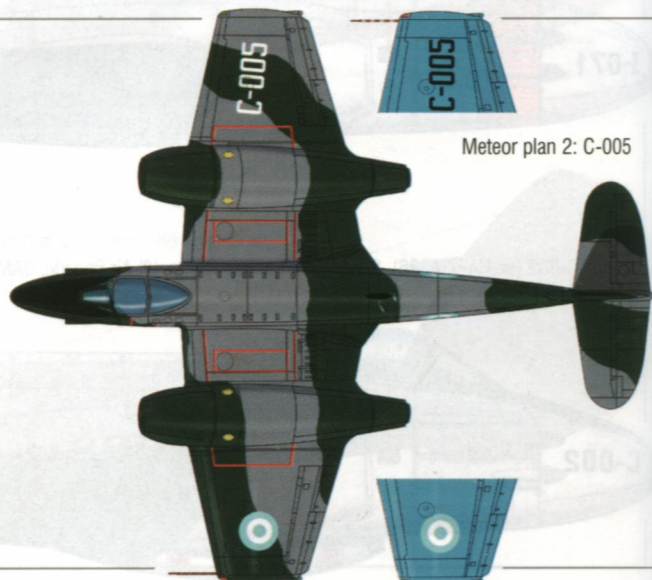
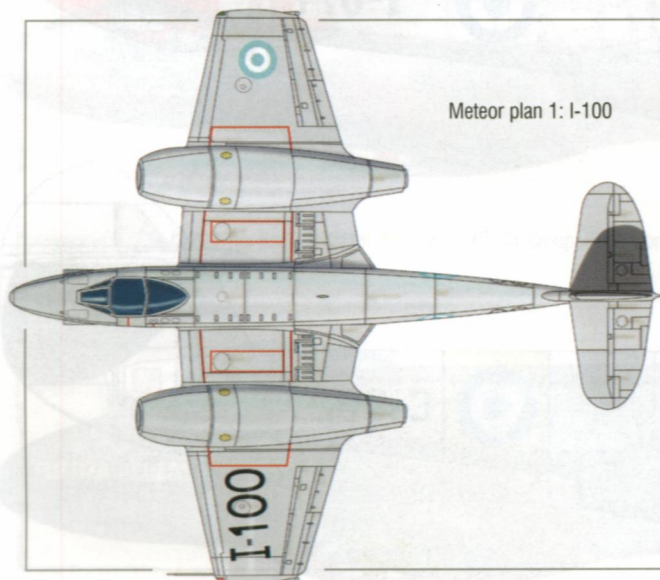
In 1962 No. 46 Squadron was created purely for aerobatic displays and their aircraft were painted red and white. The markings of the squadron were painted on all aircraft and the designation 'No. 46 Squadron' makes reference to 4 & 6 Regiments, the first units to be equipped with the Meteor. This aerobatic unit flew the Meteor until 1967. Without a doubt a great number of fighter pilots flew this legendary aircraft, but there is one which deserves special attention. This is General Lieutenant Adolf Galland who arrived at Argentina in 1948. Galland performed the role of adviser for fighter aircraft operations to the Argentine Air Force until 1954. At this date he was recalled by his home country to serve as Commander of the new Luftwaffe (Western Germany entered NATO at the same time).

Camouflages and Markings

Initially the Meteor was painted in aluminum with Argentine roundels on both sides of the fuselage. The flag with the yellow sun was painted on both sides of the vertical fin and in front of the stabiliser. During the first three first years of operation all aircraft had stencils in English, but towards 1950 these were replaced by others in Spanish. All aircraft had their registration numbers painted in black on the nose and repeated on the rear section of the fuselage. These registration numbers were also applied on the lower surface of the port wing and on the upper surface of the starboard side. Argentine roundels were applied on those wing surfaces on which the registration was not.

Between 1947 and 1959 the code 'I' (Interceptor) was used and this was followed by a three-digit number (e.g. I-001 to I-100). This number was applied on the nose wheel door in black along with the name of the ground crew chief and a colour triangle indicating the squadron, with a black number inside representing the location of the airplane within the formation. Unfortunately no information on the colour of these triangles is available.

The nickname 'Bóldo' refers to a comic-strip character, and



this character was often painted in front of the guns in different versions on airframes throughout the type's operational service. From 1952 onward a black anti-glare panel was painted in front of the cockpit, and on the port side two red lines indicated the access door.

During the revolution of 1955 the Meteors operated by the rebel forces were quickly painted quickly in a rather coarse manner. Easy identification between rebel and government Meteors was necessary, so the rebel aircraft had a cross on a 'V' with the legend 'Cristo Vence' (Christ Wins) and the letters 'MR' (Movimiento Revolucionario) were applied under the cockpit as well as being repeated on the fuselage and in a circle on the tail. These markings were brush-applied in red (See profile).

The Meteors of the government forces had the letter 'P' applied over the 'V', for the Peronistas (all in black).

In November 1957 red and white and black and white checkers were applied on the tail and big squares (red and white) were applied to the forward section of the engine nacelles. The purpose for these markings was to identify the different squadrons during combat exercises. Red stripes were also often painted on the blade antennas.

Vertical or horizontal parallel stripes were also sometimes seen applied to the vertical tail of some aircraft, in lieu of the checkers. The aircraft marked in this manner included: I-011, I-014, I-041, I-057, I-071, I-081, I-085, I-093 and I-095.

In 1958 I-056 was painted in a special red and white scheme for high altitude tests (See profile). Meteors I-048 and I-051 had two yellow strips applied on their wings tips to indicate that they were flown by Squadron Leaders. In 1959 the 'I' (Interceptor) code was changed to 'C' (Caza-bombardero)

In 1961 during 'Operativo Soberanía' blue and yellow bands were painted between the engines and wing tips as well as vertical bands on the rudder and a thin blue line on the fuselage between the cockpit and blade antenna. The aircraft painted in



this manner were: I-013, I-014, I-019, I-020, I-022, I-027, I-030, I-031, I-034, I-048, I-071, I-076, I-081, I-091 and I-100.

The ventral tank was originally painted with red and white vertical stripes, but when a camouflage scheme was applied some aircraft retained these stripes, while most had the whole unit painted Sky Blue. When F-86 drop tanks were installed (as well as the tanks constructed in Argentina) these received the same camouflage scheme as applied to the aircraft.

C-005 had a colourful sharkmouth applied to it (see profile) and red and white vertical lines were painted on the wing tips.

A yellow line with black edges was painted on the fuselage of those airplanes destined for the aerobatic flights. In some cases big squares in red and white were painted on the engine nacelles.

In 1962 all the aircraft of No. 46 Squadron were painted in red and white with the flag painted on both sides of the tail. Under the cockpit the unit marking and 'Fuerza Aérea' legend was applied in black. The registration number was painted in black on the nose wheel door (See profile)

The final camouflage scheme was created towards 1965 and was influenced by that of the RAF. The colours were: Dark Green and Ocean Grey on the upper surfaces and Matt Middle Blue on the undersurface. The legend 'Fuerza Aérea' was changed to 'Fuerza Aérea Argentina' and applied in white. Aircraft C-013 and C-036 received the legend 'VII Brigada Aérea' below 'Fuerza Aérea'. **MAM**

Humbrol Colours:

- Dark Green 163
- Ocean Grey 106
- Matt Middle Blue 89

Bibliography

Gloster Meteor F4 in Argentina, Atilio Marino, Las Alas de Perón, by Ricardo Burzaco, Davinci Editorial

Meteor 'In Action' (#152), Squadron-Signal Publications

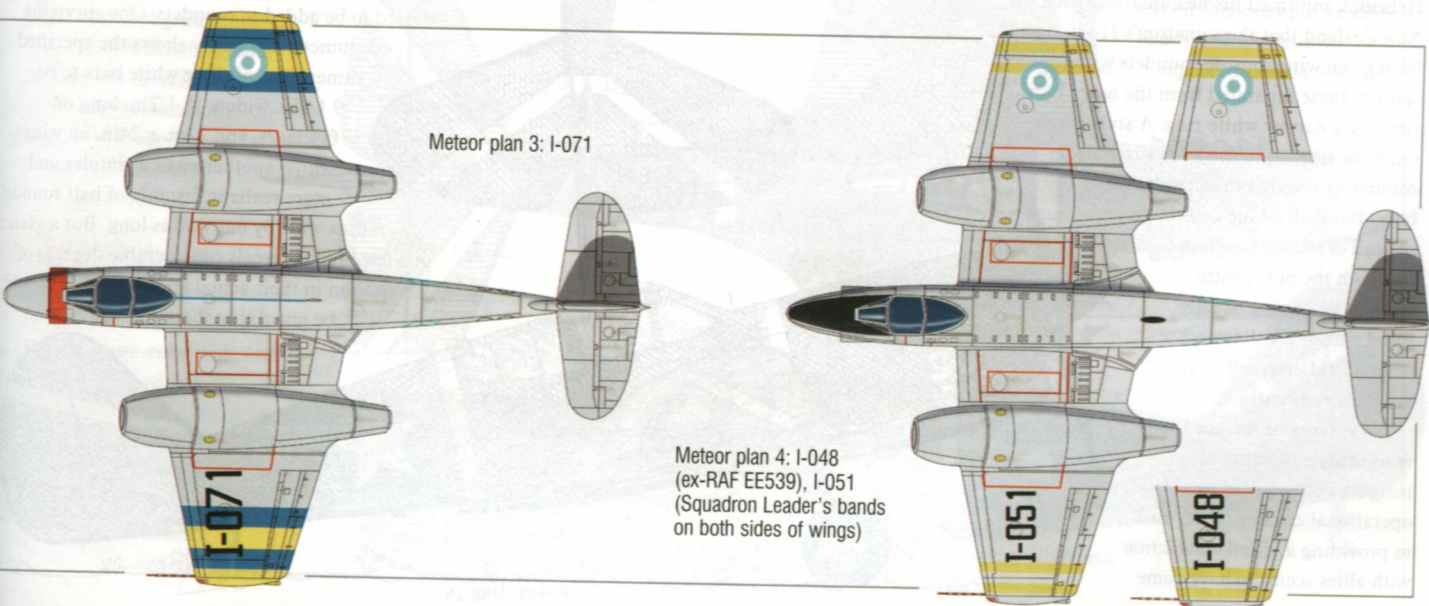
Thanks

Mr. Wright for all his help with the colours applied to the Meteor.



Meteor plan 3: I-071

Meteor plan 4: I-048 (ex-RAF EE539), I-051 (Squadron Leader's bands on both sides of wings)



RNZAF Kittyhawks

COLOUR SCHEMES & MARKINGS, PT.2

by Ian K. Baker

National Insignia

RNZAF national insignia at the commencement of the Pacific War reflected a regional defence orientation which looked to Britain and Australia. And so, like the RAAF, the RNZAF adopted RAF-style insignia: fin stripes were introduced, fuselage roundels carried a yellow outer ring, and wing topside roundels were the red and blue low-visibility style. Oxfords and Ansons were received from Britain already wearing these markings, new Hudsons and then P-40s came from the US already factory-finished to British specification in these markings.

Aerial operations against Imperial Japanese air forces soon showed up the undesirability of having red as a prominent part of national insignia. The USAAF responded first, removing the red centres from its stars. Mid-1942 saw the RAAF over-painting with white the red centres of wing topside roundels on all its first and second line aircraft, this being followed in October by service-wide adoption of blue and white markings at all positions. But it was late November 1942 when the CO of the RNZAF No.3 BR Squadron, then in the New Hebrides, informed his headquarters back in New Zealand that the squadron's Hudsons had been given wing topside roundels with blue centres, these separated from the outer blue rings by a narrow white ring. A style which might be likened to the RAF's roundel commonly referred to as the 'C-type', but with a blue centre instead of red, although in fact both the blue centre and the white ring usually fitted within the diameter of what would originally have been the red centre.

Acceptance of the need for a revised style of national insignia better suited to operational circumstances and to providing a visual association with allies seems to have come

slowly, even reluctantly, from RNZAF HQ. Only service aircraft sent to combat zones came to wear revised insignia, those intended for staying at home did not. When operational types rotated or retired to New Zealand, they retained much of the style of their operational insignia, although perhaps showing a little more red here and

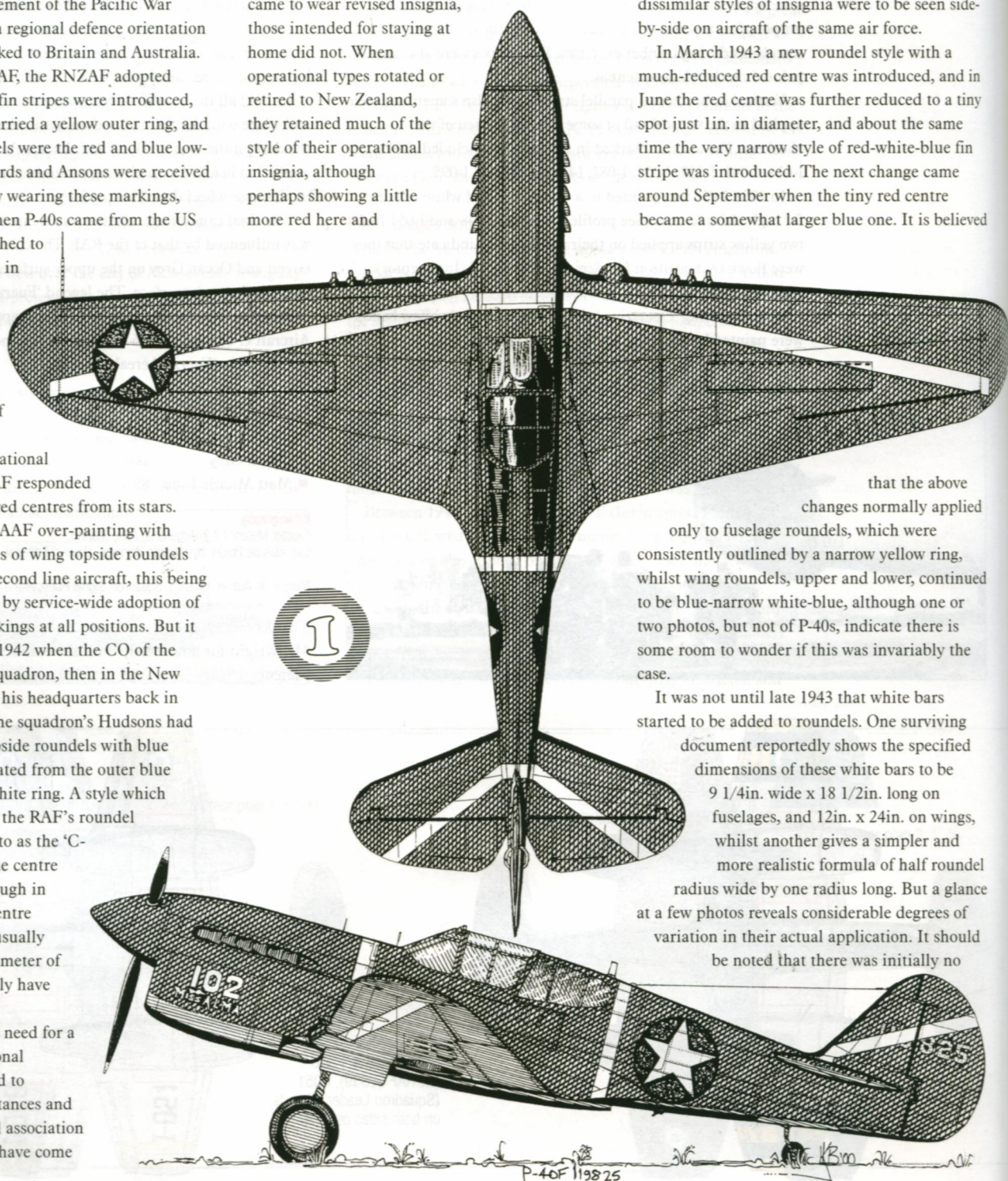
there. This resulted in the slightly strange situation at home in which two broadly dissimilar styles of insignia were to be seen side-by-side on aircraft of the same air force.

In March 1943 a new roundel style with a much-reduced red centre was introduced, and in June the red centre was further reduced to a tiny spot just 1in. in diameter, and about the same time the very narrow style of red-white-blue fin stripe was introduced. The next change came around September when the tiny red centre became a somewhat larger blue one. It is believed

that the above changes normally applied

only to fuselage roundels, which were consistently outlined by a narrow yellow ring, whilst wing roundels, upper and lower, continued to be blue-narrow white-blue, although one or two photos, but not of P-40s, indicate there is some room to wonder if this was invariably the case.

It was not until late 1943 that white bars started to be added to roundels. One surviving document reportedly shows the specified dimensions of these white bars to be 9 1/4in. wide x 18 1/2in. long on fuselages, and 12in. x 24in. on wings, whilst another gives a simpler and more realistic formula of half roundel radius wide by one radius long. But a glance at a few photos reveals considerable degrees of variation in their actual application. It should be noted that there was initially no



P-40F 119825

blue outline specified for the white bars, the blue outline style came a bit later when blue-outlined ex-US star-&-bar markings were being altered to RNZAF barred roundels. And it should also be noted that RNZAF barred roundels were carried on both Port AND Starboard upper and lower wing surfaces.

The shade of blue used in RNZAF roundels has been the subject of much doubt and discussion over the years. Much of this doubt and discussion has inexplicably ignored the fact that blue (especially lighter, brighter blues) was a colour which faded to a marked degree when exposed to strong light and the generally harsh climatic conditions prevailing in Pacific war theatres. Having looked at what the best authorities have said, and raked through all the doubt and discussion whilst at the same time studying numerous photo references, I suspect the most sensible conclusion to reach is that RNZAF roundel blue probably remained pre-war 'bright' blue, the matt finish making it even more prone to weathering. If that blue was anything like RAAF 'bright' roundel blue, which seems very likely from information we have, then it was just ever so slightly darker than BS.381C 166.French Blue, somewhat like FS.15065. Dramatic fading back of this colour, particularly on wing topsides and then on fuselage sides, produced the various shades of really light blue often cited. It has been claimed that a darker blue was adopted during 1944. This might even have been RAAF Dull Blue, obtained along with the Foliage Green. RAAF Dull Blue was certainly darker, but never as intensely dark as US insignia blue, even when fresh and it, too, soon succumbed to the effects of harsh climate, producing further shades of blue to argue about later. Photo references clearly show RNZAF roundel blue of the later war period was never as dark as the US colour, and still prone to marked fading.

The Drawings

The base drawings prepared for this article owe much to reference artwork by Don Greer, Egidio Imperi, G.R.Duval, & William Wylam. Camouflage & markings details have been delineated with great care after very close study of various photographic references.

Drawing 1:

USAAF P-40F-15, callsign 119825, coded 102, named 'Miss Alma', believed to be with 44th FS as it is coded with a number in the 100s, 13th AF, around April 1943. This example wore 'basic camouflage' of Dark Olive Drab shade No.41 and Neutral Gray shade

No.43 in conformity with the Technical Order applying from April 1941 to mid-1942. Although this F was delivered in December 1942, photo reference gives no hint of the Medium Green 'splotches' first specified in the Technical Order revisions of July 1942.

Specific background details regarding the decision to apply these distinctive white markings to all P-40s operating in the Southwest Pacific Area (details such as 'who?', 'exactly when?', or 'what prompted it?') apparently remain unclear other than their purpose of instantly distinguishing friendly P-40s from unfriendly Ki-61s. Also unclear is whether or not the white band aft of the cockpit actually wrapped right around the fuselage on examples such as this. There is a chance that it might have done, but a combination of griming of that underside area and the play of light and shadow in photos makes this uncertain. Photos suggest the application of these white markings to 44th FS P-40s probably conformed pretty consistently to that illustrated here in details such as the way in which the forward fuselage band becomes the wing bands, the location of the outer ends of the wing bands, etc. Note that corresponding bands were carried on undersides of wings and tailplanes.

Hastily sprayed application of the white, perhaps in breezy conditions, combined with the use of masking tape which was a bit too narrow, sometimes meant some misting overspray beyond the masking tape. When the tape was removed, the faint presence of that overspray created an impression of white bands with a dark edging. 102 'Miss Alma' showed no sign of this, although it is clearly visible on 111 'Destitute Prostitute', for example, a close-up photo of which you may find if you have Dana Bell's 'Air Force Colors

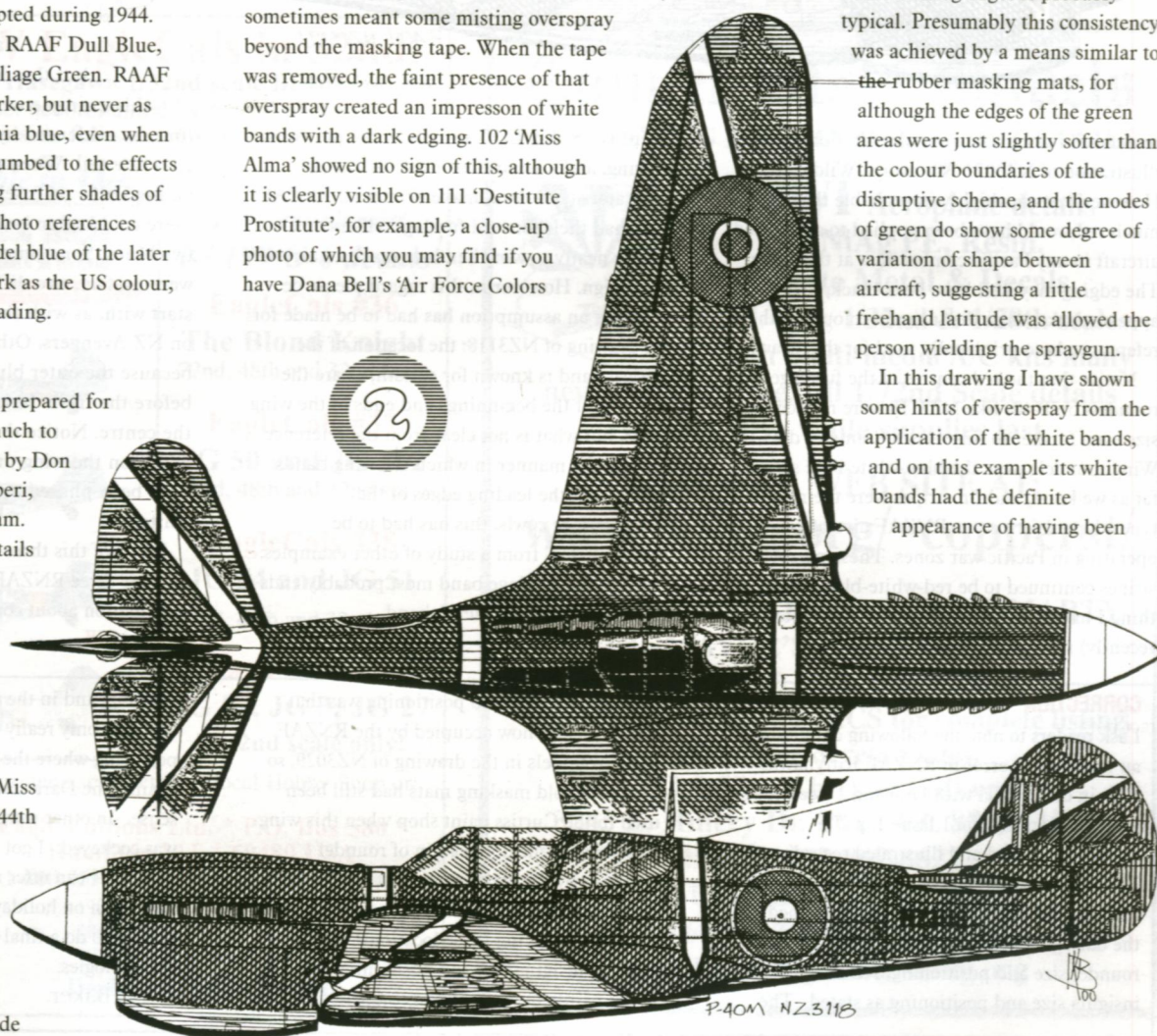
Vol.3': look on p.12. The reason for drawing attention to this will become apparent in my discussion of the next example.

Drawing 2:

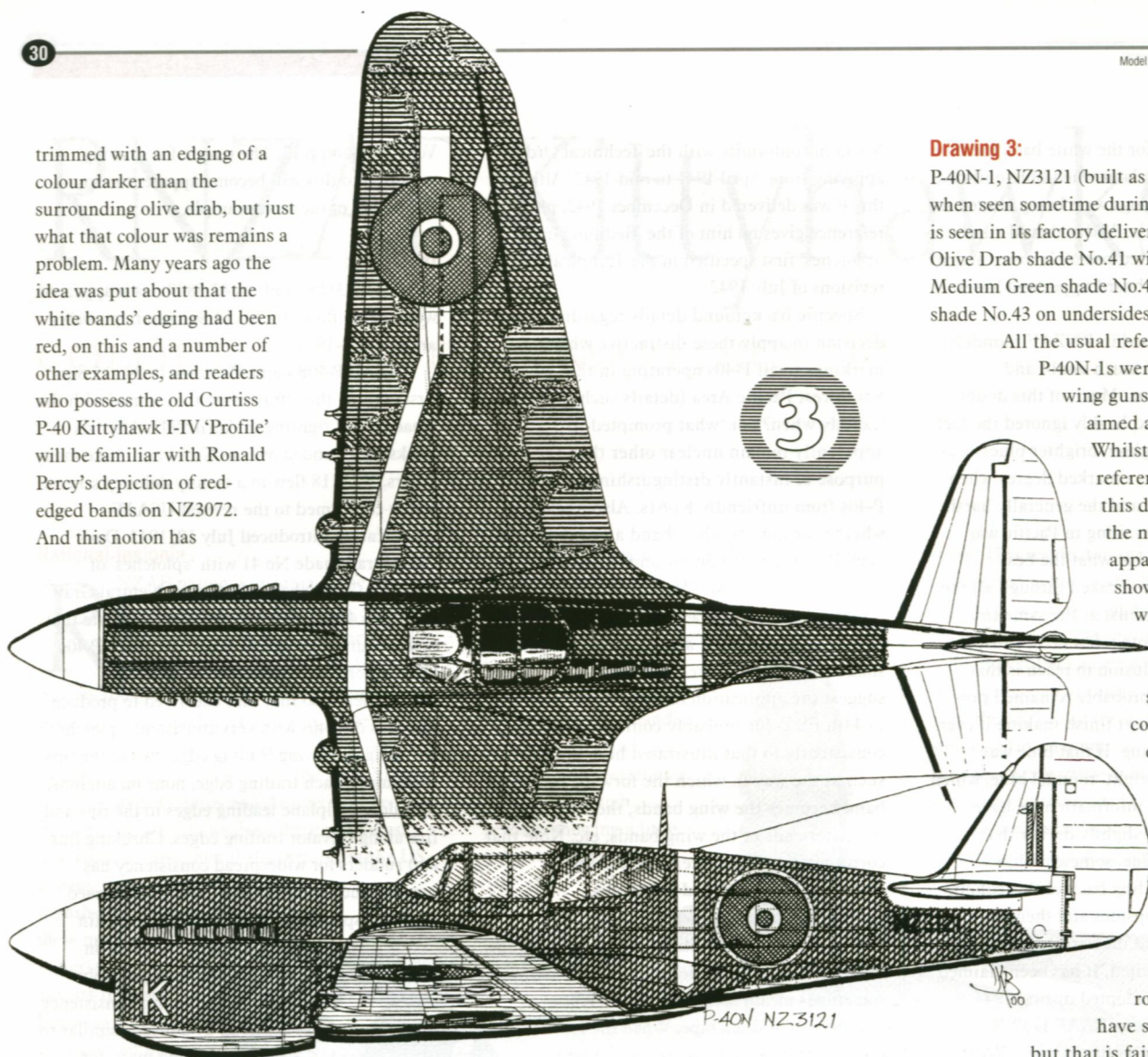
P-40M, NZ3118 (built as 43-5809), as it appeared when being flown by No.14 Squadron, probably around mid-1943.

RNZAF P-40Ks and Ms flown by No.15 Sqn. first entered the affray when they joined with the Guadalcanal fighting in April 1943. After six weeks they handed over to No.14 Sqn. Like many others, NZ3118 flew in a factory delivery scheme which conformed to the revised USAAF specification introduced July 10, 1942: Dark Olive Drab shade No.41 with 'splotches' of Medium Green shade No.42, and Neutral Gray shade No.43 on undersides. Photos indicate that just as Curtiss produced large batches of P-40s very uniformly camouflaged to suit RAF requirements, so they also contrived to produce big runs of P-40s with very consistent 'splotches': six along each wing leading edge, two at the tips, three along each trailing edge, none on ailerons, five along tailplane leading edges to the tips and five along elevator trailing edges. Checking fins and rudders for widespread consistency has proven much more difficult, but it is believed that two 'splotches' of Medium Green on fin leading edges, and four or five on rudder trailing edges is probably typical. Presumably this consistency was achieved by a means similar to the rubber masking mats, for although the edges of the green areas were just slightly softer than the colour boundaries of the disruptive scheme, and the nodes of green do show some degree of variation of shape between aircraft, suggesting a little freehand latitude was allowed the person wielding the spraygun.

In this drawing I have shown some hints of overspray from the application of the white bands, and on this example its white bands had the definite appearance of having been



trimmed with an edging of a colour darker than the surrounding olive drab, but just what that colour was remains a problem. Many years ago the idea was put about that the white bands' edging had been red, on this and a number of other examples, and readers who possess the old Curtiss P-40 Kittyhawk I-IV 'Profile' will be familiar with Ronald Percy's depiction of red-edged bands on NZ3072. And this notion has



Drawing 3:

P-40N-1, NZ3121 (built as 42-104683), coded K, when seen sometime during later 1943. NZ3121 is seen in its factory delivery scheme of Dark Olive Drab shade No.41 with 'splotches' of Medium Green shade No.42, and Neutral Gray shade No.43 on undersides.

All the usual references tell us that P-40N-1s were fitted with only four wing guns as part of a strategy aimed at increasing speed. Whilst the principle reference photo used for this drawing does not make the number of wing guns apparent, some photos show RNZAF N-1s fitted with six guns. A service unit retrofit? National insignia show an interesting combination here of earlier and later styles: white bars having been added to the blue-white-blue wing markings but not yet to the fuselage roundels. Those fuselage roundels just might have still had red centres, but that is fairly unlikely, for with this example we have moved on a little in

time, as evidenced by the white bars and the all-white tail. When red centres were repainted blue on fuselage sides for operations, there could often be a mis-match between the two blues. Sometimes this was because there were, in fact, two different blues involved to start with, as with the converted RAF roundels on NZ Avengers. Other times it was simply because the outer blue ring had already faded before the fresh darker blue paint was added to the centre. Notice there are no white theatre bands on the wing undersides, these seem to have been phased out when tails became all-white.

Part 3 of this three-part article will illustrate another three RNZAF P-40s, and also provide information about codes, theatre markings and serials. **WAM**

resurfaced recently in a popular US publication's illustration of NZ3072 'Wairarapa Wild Cat'. However, it seems highly improbable that so much red would have been applied to any Allied aircraft in any Pacific combat area at that time. The edging may well have been black, it certainly appears darker than the insignia colours in the reference photo principally used for this drawing.

Notice that the red centres of the fuselage roundels on P-40s like NZ3118 were reduced in size even further to tiny 1 inch diameter dots. Wing roundels were the blue-white-blue style, so far as we know, and fin stripes were the narrow type adopted for use on RNZAF aircraft operating in Pacific war zones. These narrow fin stripes continued to be red-white-blue (another thing I have seen incorrectly depicted quite recently) red leading as always.

Unlike the USAAF example in the previous drawing, and assumptions made by various illustrators (and decal makers?) not all RNZAF P-40s had their forward fuselage white band linking neatly to wing bands to make an arrow-like design. However in this regard please be clear that an assumption has had to be made for this drawing of NZ3118: the location of the forward band is known for certain, as are the locations of the beginnings and ends of the wing bands, but what is not clear from the reference photo is the manner in which the wing bands spring from the leading edges of the undercarriage cowl; this has had to be 'reconstructed' from a study of other examples. The forward fuselage band most probably ends in a tapered shape like the aft band.

RAF roundel size and positioning was that which you see now occupied by the RNZAF upper roundels in the drawing of NZ3029, so even if the old masking mats had still been used in the Curtiss paint shop when this wing was painted, the delineation of roundel locations by the green would not any longer have been visible as roundels were now actually occupying those locations! The USAAF insignia size and positioning was that of the painted-over markings indicated in the

drawing, and in the source photo that painting over was only really clearly discernable on the port wing where the darker new paint contrasts against the Dark Earth, which now makes sense. In other words, my explanation of this was cockeyed: I got things quite the wrong way around! I can offer no excuse, my brain must have been on holiday when I wrote it and then I failed to do a final check-over as I should. My apologies. Ian K.Baker.

CORRECTION

I ask readers to note the following correction to an inexcusable error in RNZAF Kittyhawks Pt.1, in connection with Drawing 2 (see Model Aircraft Monthly, Vol.1 Issue 1, p.20). Everything stated and illustrated regarding the camouflage pattern was correct EXCEPT that the wing topside insignia locations defined by the dark green on Tomahawks, were for RAF roundel size and positioning, NOT for USAAF insignia size and positioning as stated. The

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The La-7 preserved in the Prag-Kbely Aviation Museum

Lavochkin La-7

Text and photos by Przemysław Skulski, historical photos by P. Skulski collection, scale drawings by Jerzy Kolanowski

During World War II in the Soviet Union there was strong competition between two construction bureaux: the OKB (Opytno Konstruktorskiye Biuro - Experimental Design Bureau) led by Aleksandr Yakovlev and the OKB led by Semyon Lavochkin. Both of these teams designed single-seat fighter aircraft for the Voenno Vozdushnye Sily (Soviet Air Force).

History

In the late 1930s within OKB Lavochkin, an important role was played by two other constructors: Vladimire P. Gorbunov and Mikhail I. Gudkov. The first fighter type to result from this team was the LaGG-1, which was later modified and produced as the LaGG-3. It was a single-seat monoplane, powered by the Klimov M-105P (1,050hp) piston engine and armed with one 20 mm cannon and one or two 12.7mm ShKAS machine guns. Opinions about these machines differed, as some pilots loved the type's manoeuvrability, while the vast majority felt that overall it was not a good aircraft. The LaGG-3 was too heavy, the main construction material was wood, and its engine was too weak. All of these factors coupled with the type's flight characteristics made this a very difficult aircraft to fly. Only experienced pilots had a chance in a confrontation with German fighter aircraft if they were flying the LaGG-3. For young, inexperienced Russian pilots the LaGGs often became their coffins (the abbreviation LaGG was known as Lakirovanny Garantirovanny Grob - vanished, guaranteed coffin).

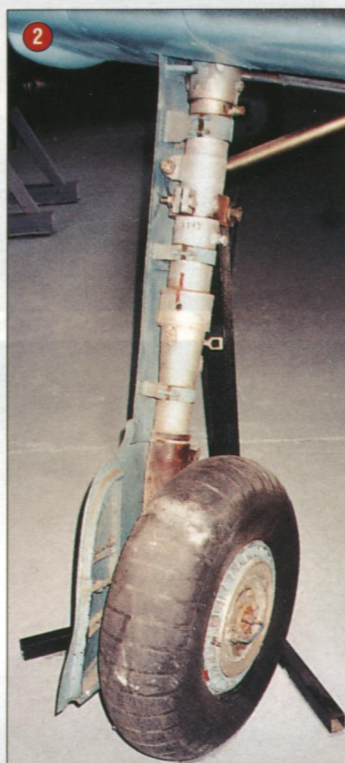
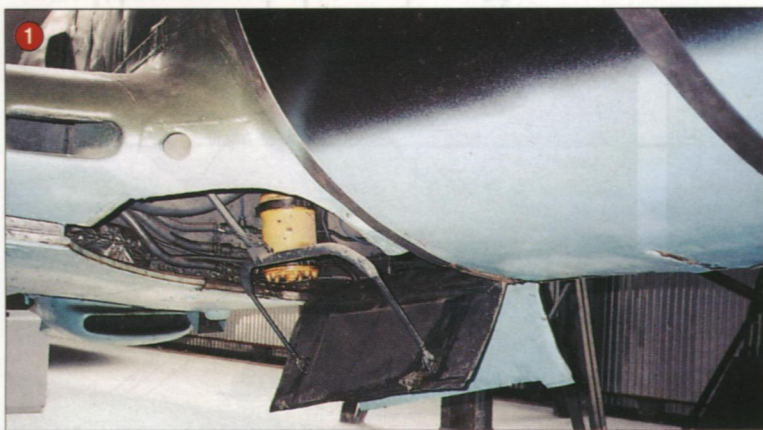
During the Battle of Stalingrad in 1942, a new version of a Lavochkin fighter was used in combat for the first time; it was the La-5 (as during this period Gorbunov and Gudkov had withdrawn from the construction team). In fact this machine was nothing more than the LaGG-3 powered by a radial M-82 engine. The new fighter was much better than the LaGG-3 and quickly

became famous as the 'Wooden Saviour of Stalingrad'. This was soon followed by a modified version, the La-5FN, which had a new engine and a redesigned rear fuselage and fin. This machine was powered by Ash-82FN, the best Soviet radial engine of World War II. This powerplant was designed by Shvetsov and it was a 14 cylinder, two-row, air-cooled engine with a two-stage supercharger and direct fuel injection, rated at 1850hp. The La-5FN was used for the first time in the Battle of Kursk in the summer of 1943 and this new aircraft was a dangerous opponent for the Bf 109G and Fw 190A.

In the autumn of 1943 Lavochkin started work on a new fighter. The project received the designation Samolet 120 (Aircraft 120) or Lavochkin 120. The machine was loosely based on the La-5FN, but for all intents and purposes was in fact a new design. The main problems to overcome were aerodynamics and weight reduction. Co-operation with the TsAGI (Tsentrarniy

The same machine, viewed from the left side





1. The right main landing gear bay, note the compressed air bottle and the door retraction linkage

2. The main wheel oleo, wheel and undercarriage door

3. An Ash-82FN engine from the La-7 on display alongside the Prag-Kbely example

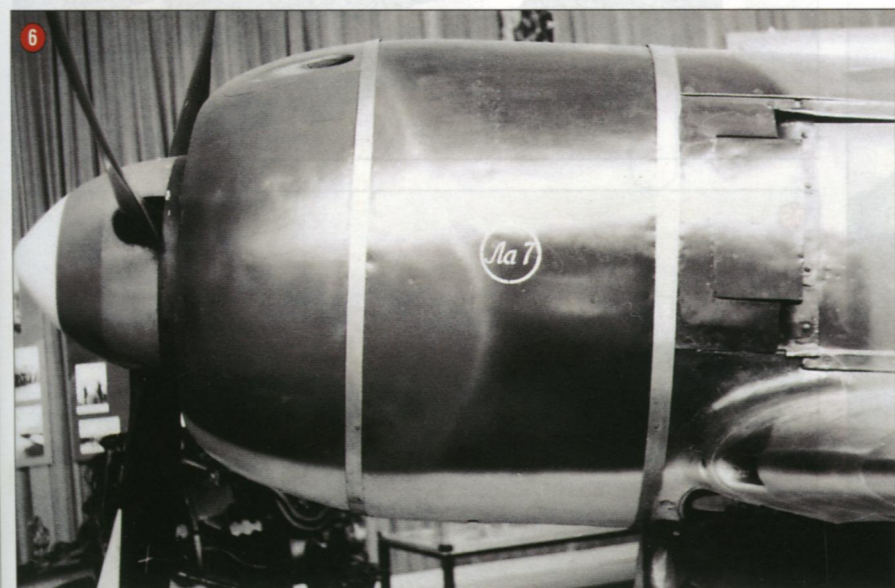
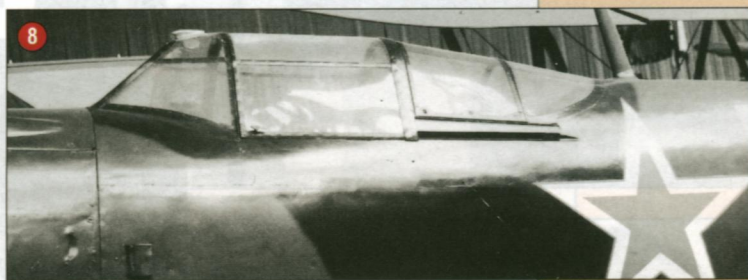
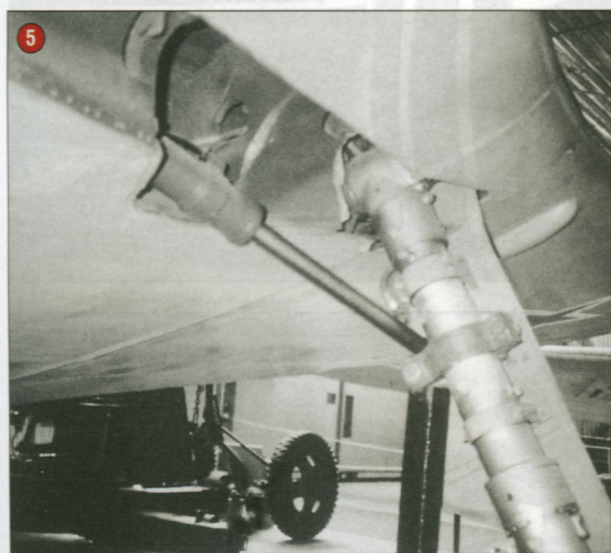
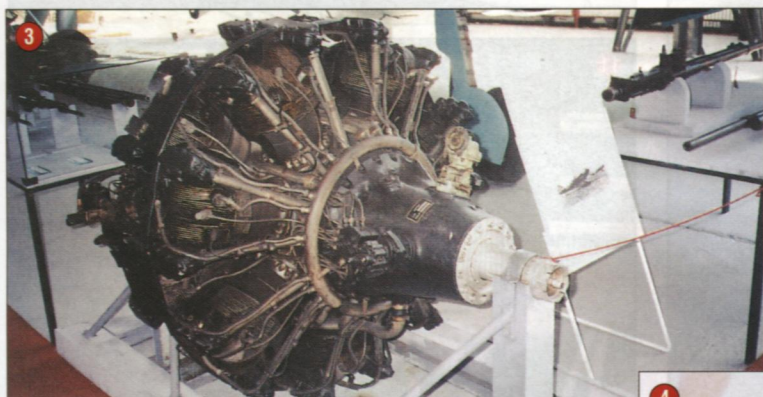
4. Close-up inside the port undercarriage bay

5. The hydraulic retraction jack in the starboard undercarriage bay

6. The VISH-105V propeller, engine cowl, exhaust outlets and cannon ports

7. Overall shot of the rear fuselage, note the radio bay access hatch (lower section of the aft '7').

8. The canopy and radio mast



9. Details of the exhaust outlet, note the undercarriage position indicator on top of the wing in the foreground

10. The oil cooler intake was repositioned under the fuselage on the La-7.

11. An overall view of the tail

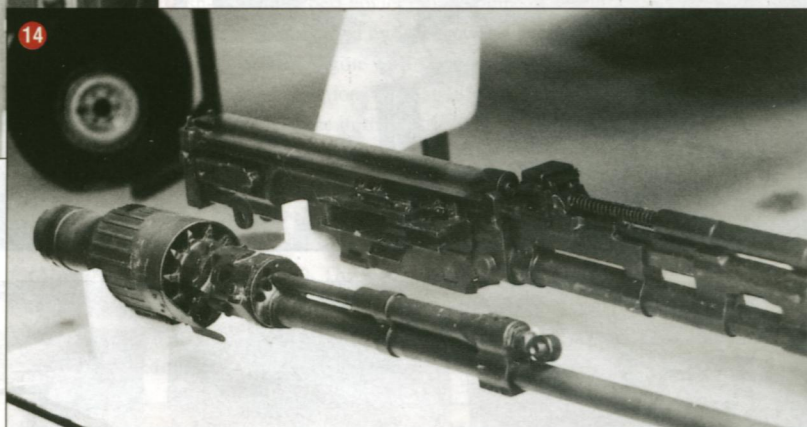
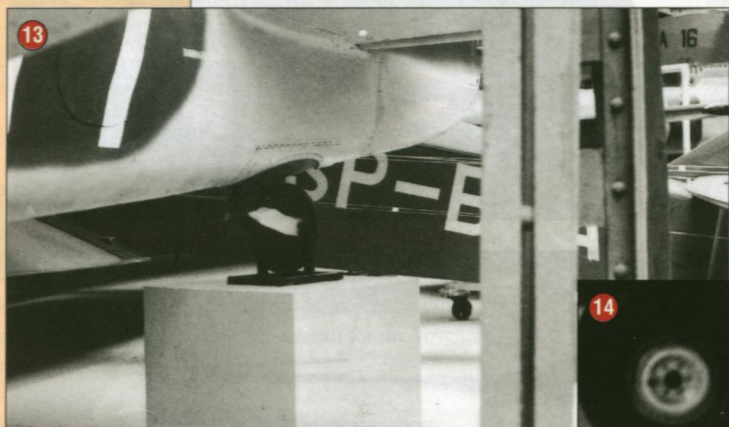
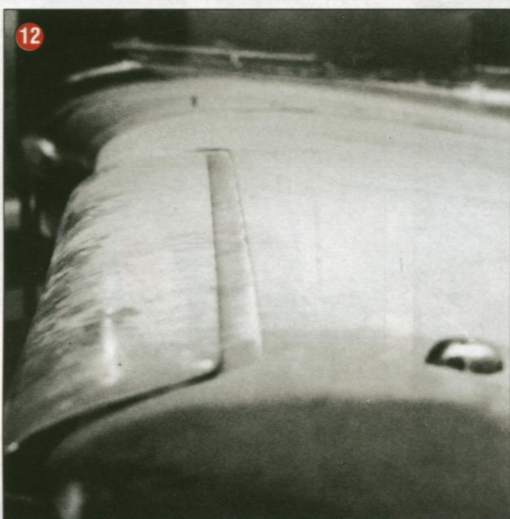
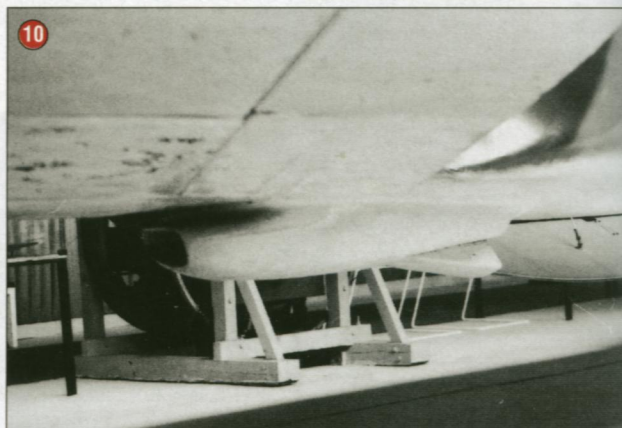
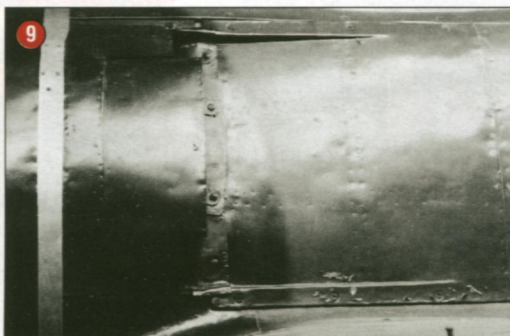
12. The leading edge slat in the port wing, note the wing tip light in the foreground

13. The tailwheel

14. A ShVAK cannon

15. A La-7 with the tactical number '49' of the 2nd Czechoslovakian Fighter Regiment

16. A close-up of the tail area on the La-7R with RD-1KhZ rocket engine clearly visible



Lavochkin La-7

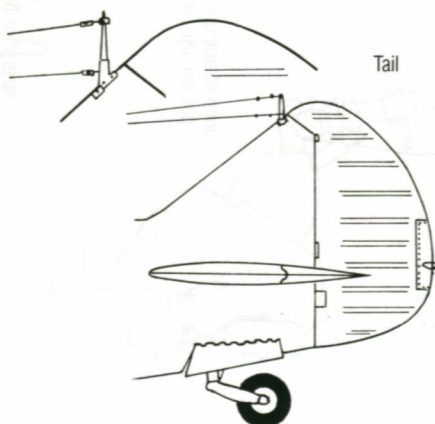
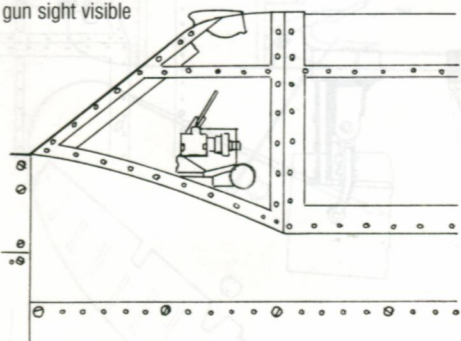
1/48TH SCALE PLANS

MODEL AIRCRAFT
Monthly

Volume 1 Issue 2

by Jerzy Kolanowski

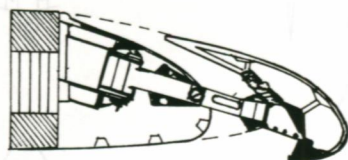
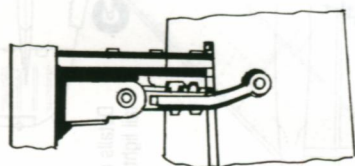
Windscreen with
gun sight visible



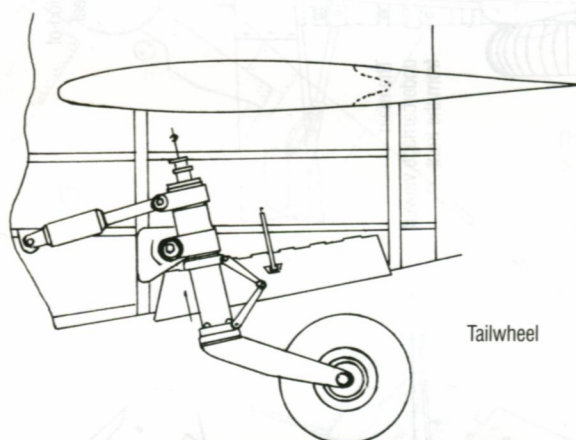
Tail



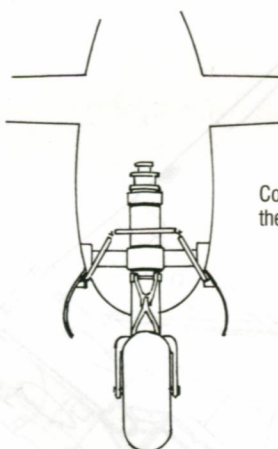
Details of the
tail light



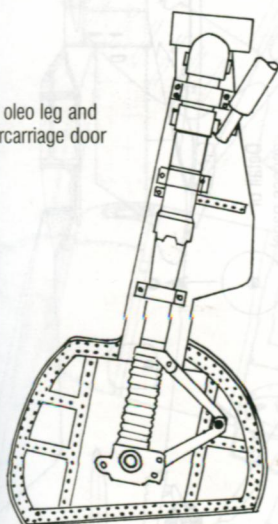
Construction of the wing
leading edge slats



Tailwheel



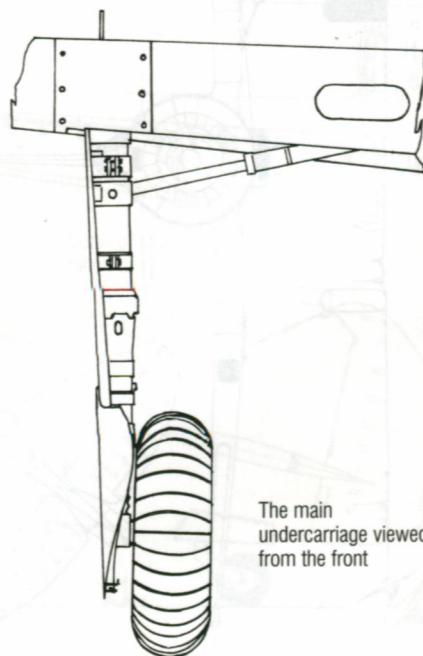
Construction of
the tailwheel



Main oleo leg and
undercarriage door



Main wheel



The main
undercarriage viewed
from the front

Lavochkin La-7

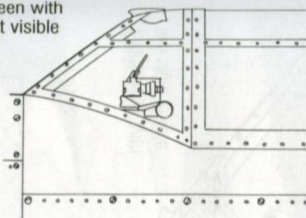
1/72ND SCALE PLANS

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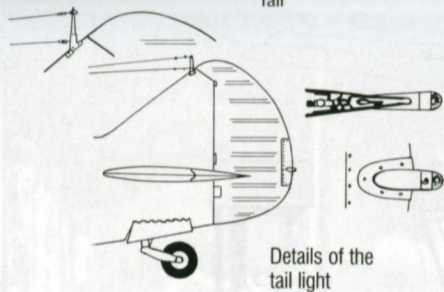
Volume 1 Issue 2

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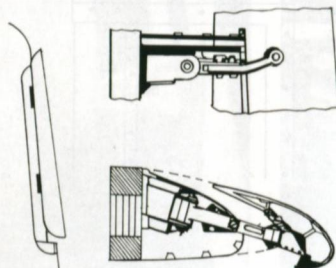
Windscreen with
gun sight visible



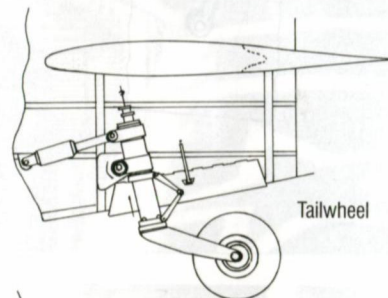
Tail



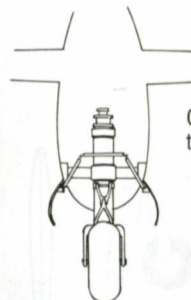
Details of the
tail light



Construction of the wing
leading edge slats

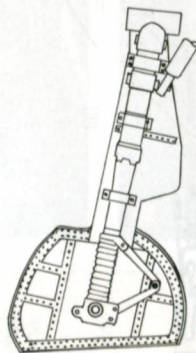


Tailwheel

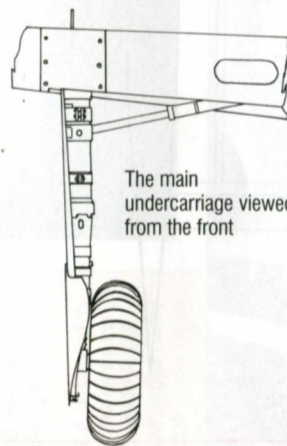


Construction of
the tailwheel

Main oleo leg and
undercarriage door

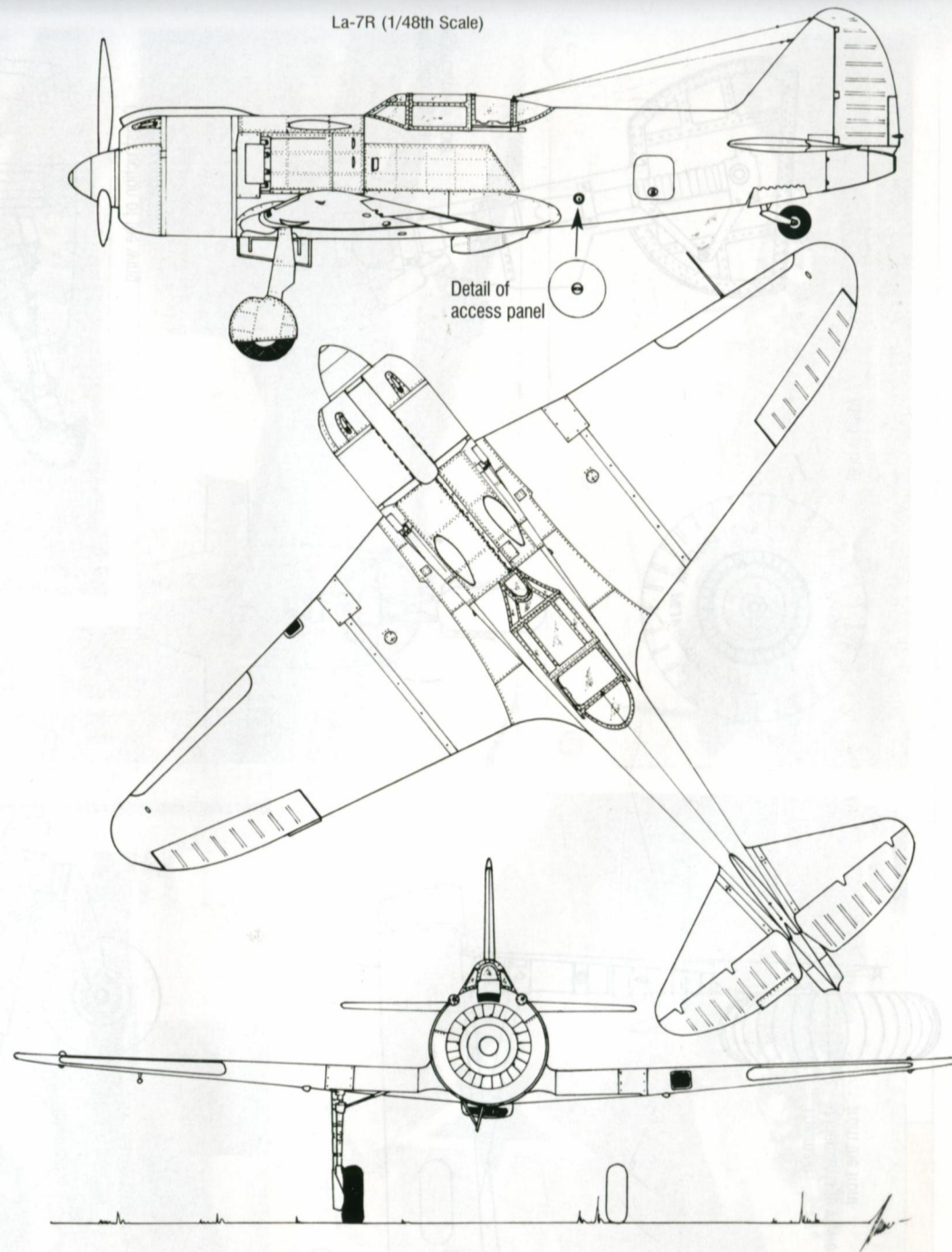


Main wheel

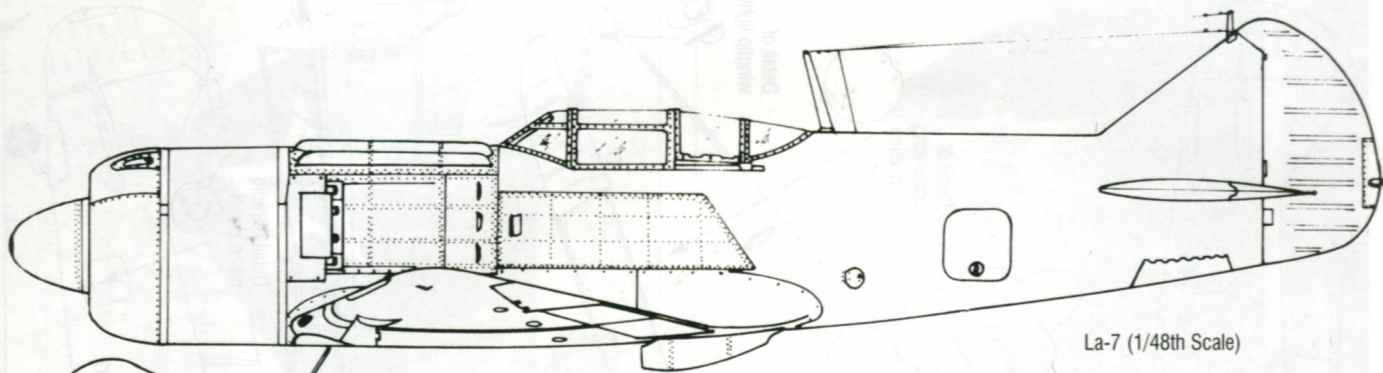


The main
undercarriage viewed
from the front

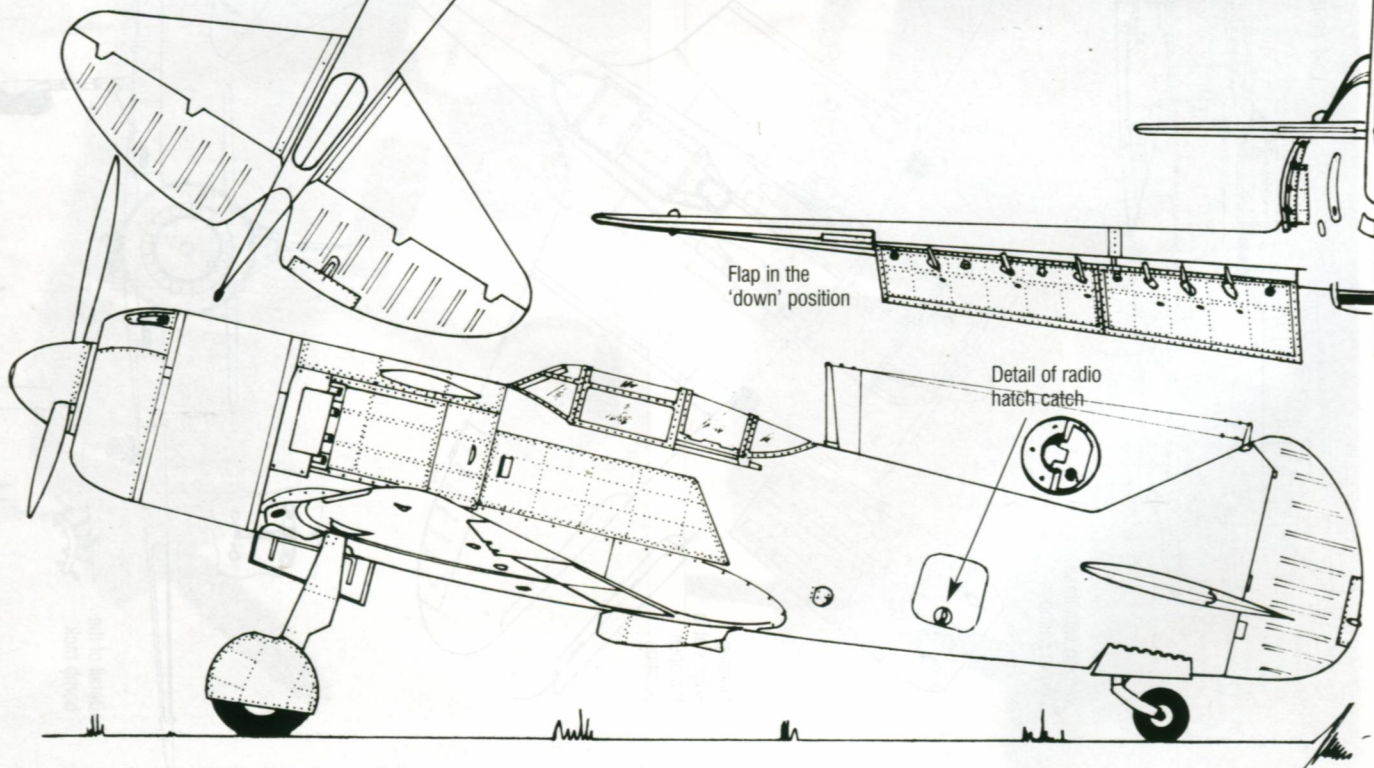
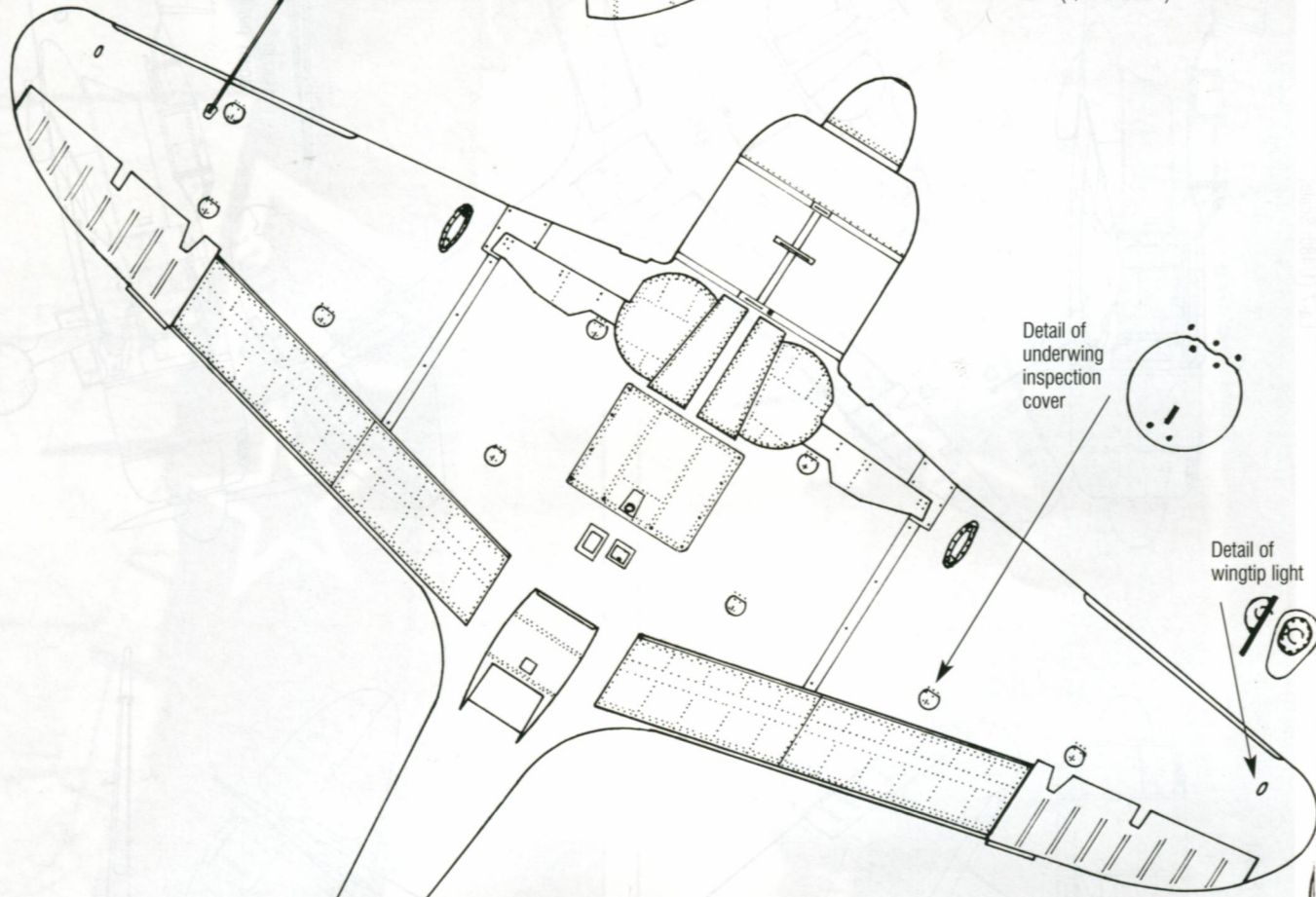
La-7R (1/48th Scale)



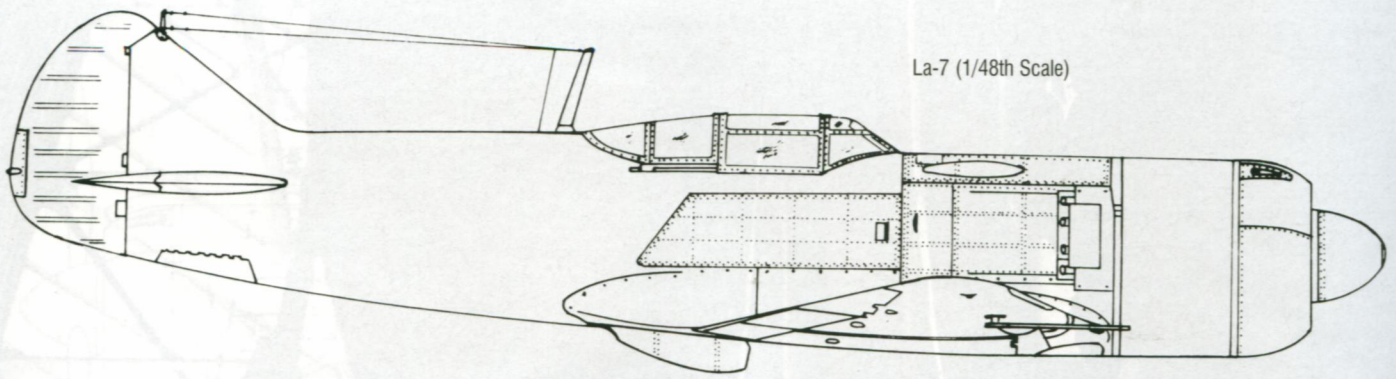
Detail of
access panel



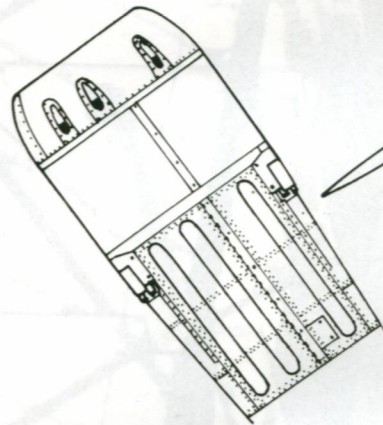
La-7 (1/48th Scale)



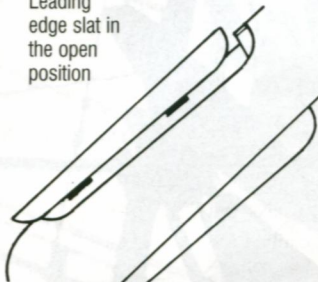
La-7 (1/48th Scale)



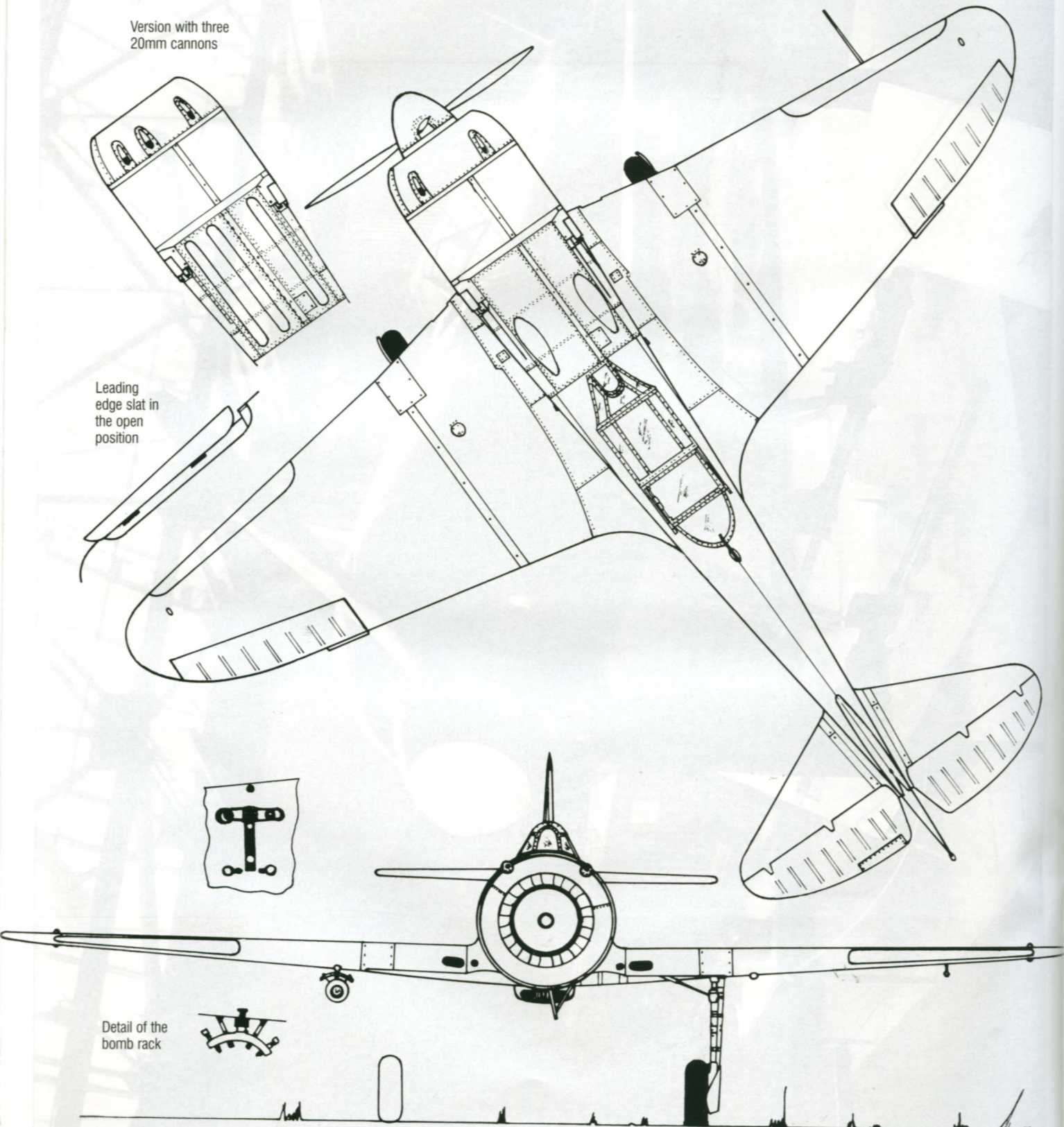
Version with three
20mm cannons



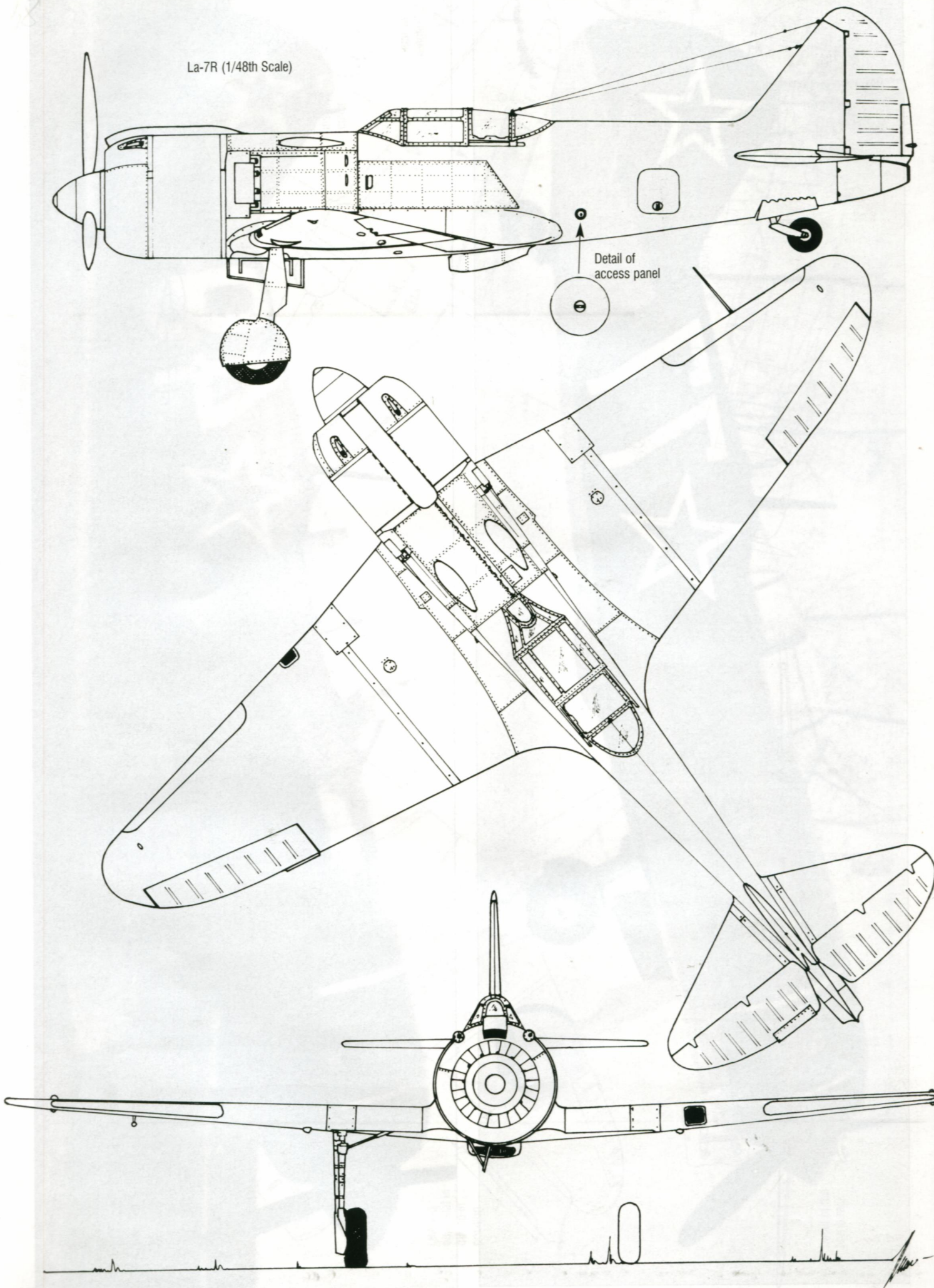
Leading
edge slat in
the open
position



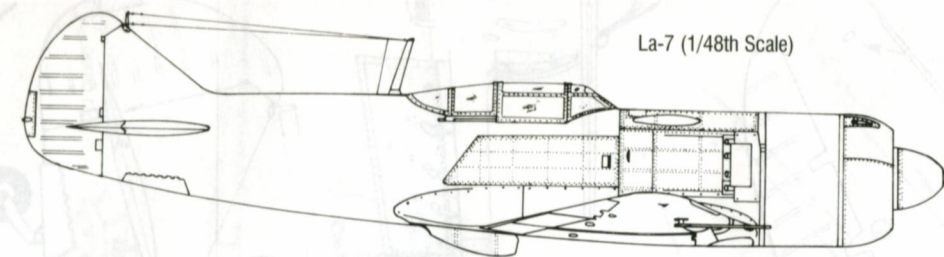
Detail of the
bomb rack



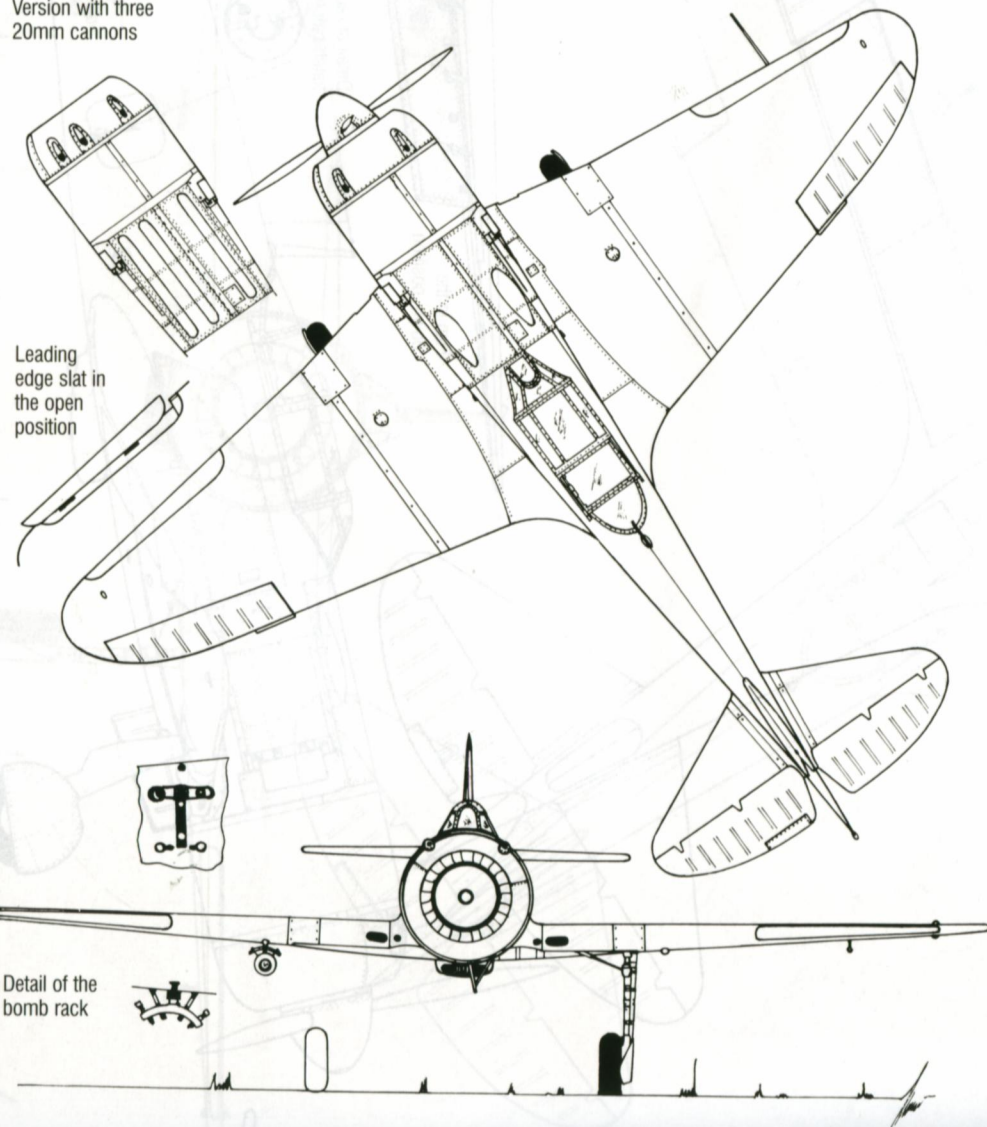
La-7R (1/48th Scale)



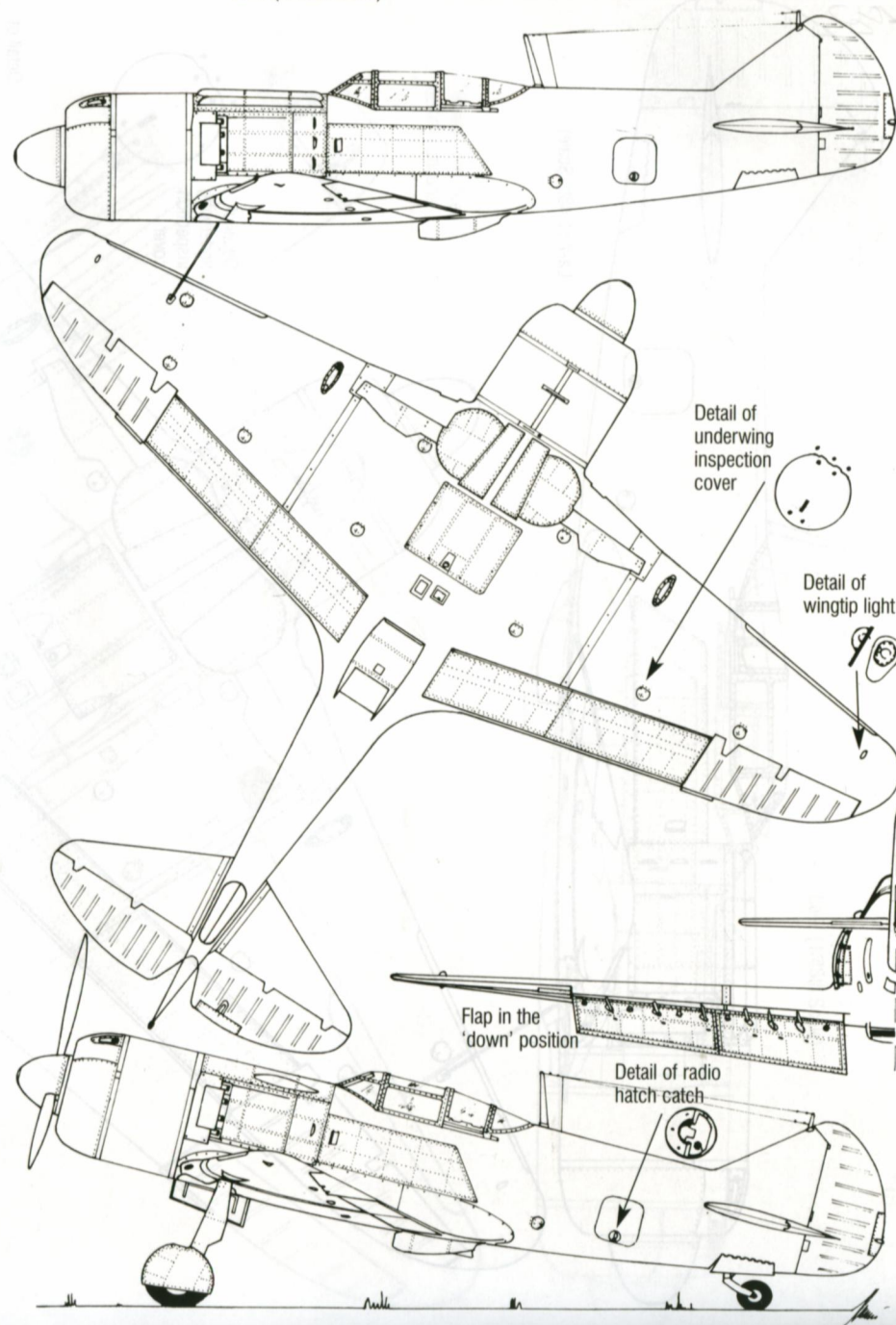
La-7 (1/48th Scale)

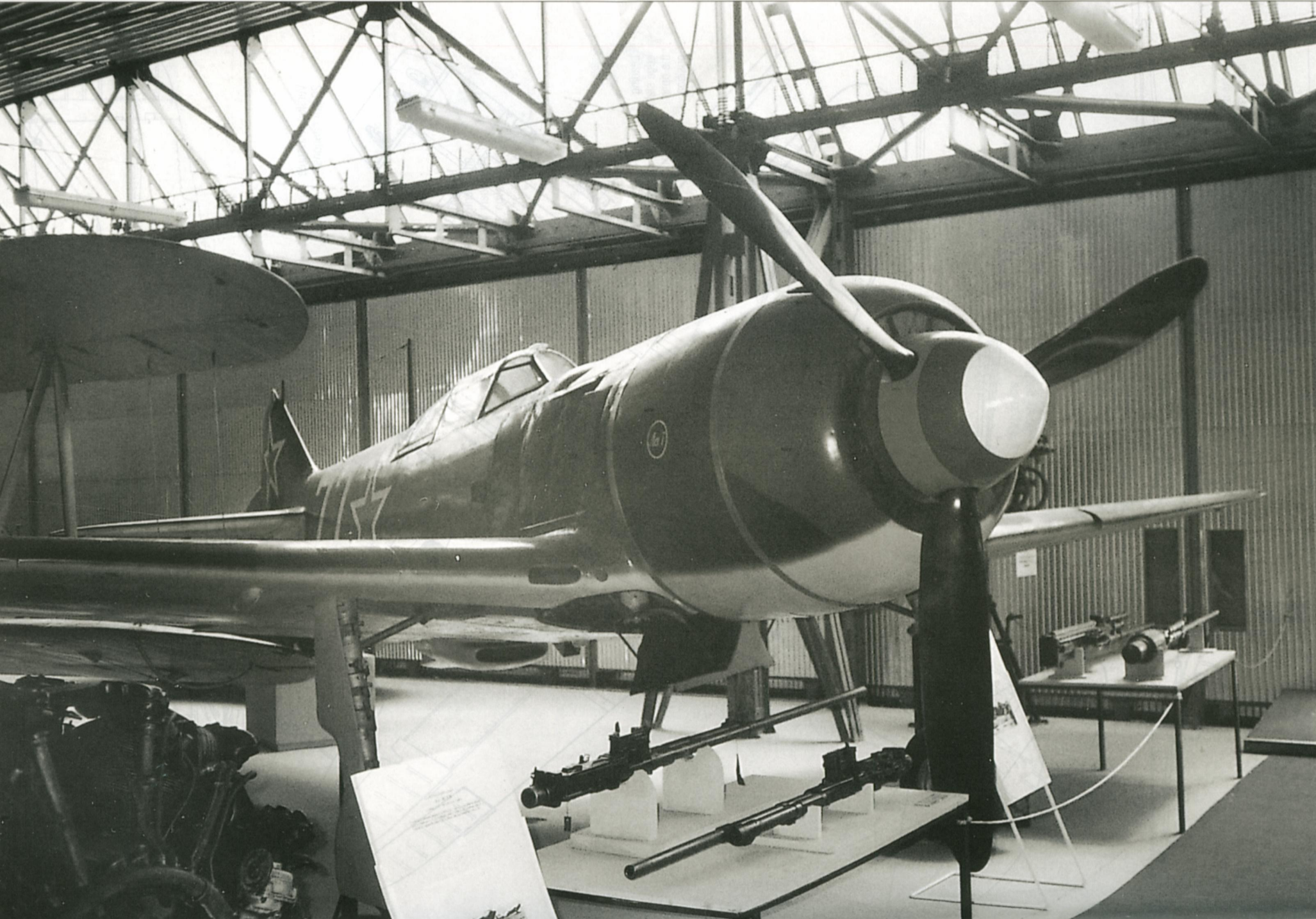


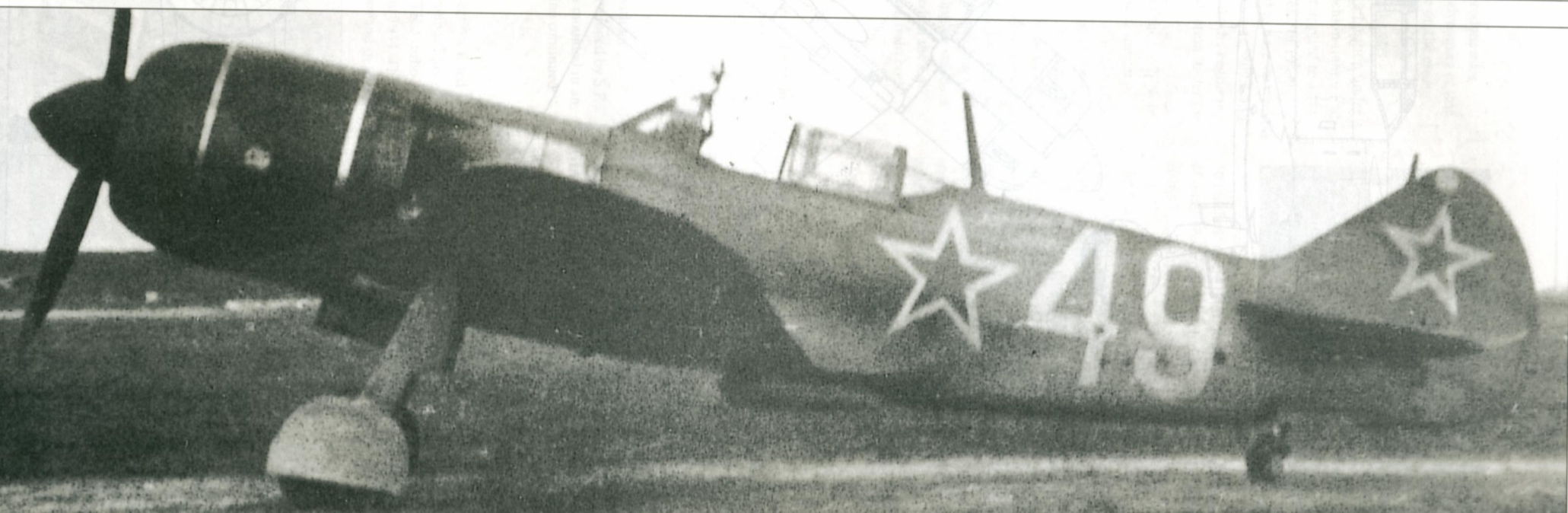
Version with three 20mm cannons



La-7 (1/48th Scale)







Aerogirodinamicheskiiy Institute - Central Aerodynamics Institute) in Moscow helped improve the aerodynamics of this new aircraft. The long supercharger air intake on the engine cowling, characteristic of the La-5FN, was replaced by a flush intake in the port wing root. The oil cooler intake was transferred from the bottom of the cowling to a position under the aft fuselage. Without doubt this new Lavochkin fighter had one of the cleanest radial engine cowlings ever applied to a fighter. The prototype was flight tested at the end of 1943 by A.I. Nikashin and N.V. Adamovitch and proved to have very good performance with a maximum speed of 680km/h at 5800m and a rate of climb of 5,000m within 4.45 minutes. At the beginning of 1944 the new fighter was put into serial production under the designation La-7.

The wings of the La-7 were similar to those of the La-5FN, but the internal structure had changed considerably, as the wing spars were aluminium not wood. Thanks to this, the total weight was reduced by about 100kg. The La-7 was powered by Ash-82FN engines and its armament consisted of two 20 mm ShVAK cannon located in the fuselage. The type was produced in two factories, at Moscow and in Yaroslavl. The machines manufactured in Yaroslavl were armed with three Berezin B-20 20 mm cannon, which were lighter than the ShVAK versions. The machines produced at the Yaroslavl factory were also of a higher standard than those built at Moscow. Other armament used on the La-7 included 100kg bombs and RS-82 rocket. In total, from both factories, 5,733 La-7s were manufactured.

Other versions

La-7UTI

The La-7UTI (or UTI La-7) was a training version of the basic La-7. Conversion comprised the insertion of a second cockpit and seat aft of the radio bay. The armament was reduced to one cannon and the La-7UTI was not only used for training but also for reconnaissance missions.

La-7R

The La-7R (R = Rocket) was the version fitted with an additional auxiliary rocket engine (RD-KhZ), developed by S.P. Korolev and V.P. Glushko. The rocket engine was mounted in an extended rear fuselage and trials with this machine continued until February 1945.

La-7TK

The La-7TK was an experimental high-altitude version, fitted with a turbo-supercharged modified Ash-82FN engine. This modification consisted of the fitment of a pair of TK-3 turbo superchargers and testing started in the summer of 1944. The La-7TK attained a top speed of 676km/h at 8,000m and in total



The supercharger air intake on the port wing leading edge

10 machines were built. Later a La-7 was tested with a number of other powerplants, including the Ash-71TK (2,000hp) and the Ash-83 (2,000hp).

The La-7 in combat

The first La-7s were posted to the Soviet fighter guard regiments in the summer of 1944. One of the first to receive this type was the 176th GIAP (176th Guards Fighter Regiment), in which served Ivan Kozedub the top Soviet fighter ace with 62 kills. He scored his last 17 kills flying the La-7, and this included a Messerschmitt Me 262, which he shot down in February 1945. The performance of this new aircraft was very good, and the high speed, good rate of climb and manoeuvrability were all put to good use by pilots such as Kozedub. In the opinion of pilots like Kiril Yesstigneyev (178th GIAP; 53 individual + 3 shared kills) and Sultan Amiet-Khan (9th GIAP; 30+19) it was the best Soviet fighter of WWII.

As well as having a very good performance it was also a very easy aircraft to work on. It is worth remembering though that there were mixed opinions about the La-7, as Alexander "Sasha" Pokryshkin thought the La-7 was a great fighter, but until the end of the war 'Sasha' flew the Bell P-39 Airacobra! There are good reasons for this. One was that the La-7 had a relatively small range (about 650km), and the other is that there were problems with the engine's cooling. The Ash-82FN engine often overheated and sometimes even burned and the La-7 was also not easy to control, especially during take-off and landing. One of its victims was Aleksandr Kubov (31 + 19 victories) of 16th GIAP, who was killed in a landing accident on an airfield near Sandomierz (Poland). Some Russian pilot preferred the earlier La-5FN, even with its inferior performance, as it was more stable in flight.

Apart from the Soviet Air Force's use of the La-7 the 1st Czechoslovakian Fighter Regiment also had the type. Receiving the type in the last weeks of the war, the unit was too late to ever see any combat with it. After the war the 2nd Fighter Regiment was also equipped with the La-7 and in Czechoslovakian service the type was designated the S-97. **NAM**

A La-7, possibly the preserved example prior to installing in the museum



Recommended kits

1/72nd Scale
KP (plastic kit)
Novo/Frog (plastic kit)
1/48th Scale
Hobbycraft (plastic kit)

Recommended Accessories

1/72nd Scale
Fotocut (Cockpit detail set, Item No. 772)
1/48th Scale
Eduard 48012 (Cockpit Upgrade)
Eduard 48014 (Flaps)
Fotocut 748 (Cockpit Upgrade)

Recommended Decals

1/72nd Scale
Propagteam 72028 (Olgushin)
Propagteam 72031 (Kozadub)
1/48th Scale
AeroMaster 48086
AeroMaster 48087

1. Reconnaissance version (Il-28R) preserved in the Polish Aviation Museum in Krakow. This machine ('Red 72') is very interesting because at the end of its service it was adopted for special duties. The bomb bay was modified to drop aluminium chaff

2. Rear view of the Il-28R

3. Wing tip fuel tank - front view

4. Wing tip fuel tank - rear view

5. Engine nacelle of the Il-28R

6. Rebuilt bomb bay of the Il-28R

7. Aluminium chaff lanuncher

8. Il-28 - bomber version

9. Port engine nacelle - bomber version (inner view)



Photo Album

ILYUSHIN IL-28 BEAGLE





10. Port engine nacelle

11. Training version - IL-28U

12. The nose of the IL-28U

13. Tail turret of the IL-28U

14. IL-28E - Polish ECM version. It is the bomber version converted for special electronic duties

15. IL-28E - two dielectric fairings under the fuselage

16. IL-28E - dielectric fairing of the ECM equipment

17. IL-28E - details of the middle section of the fuselage

18. Il-28 - bomber version (Military Museum, Kolobrzeg)

19. Il-28 bomber in the museum at Poznan

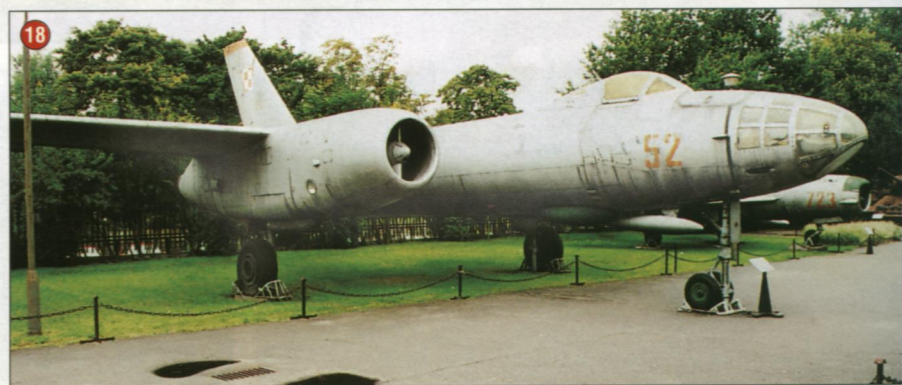
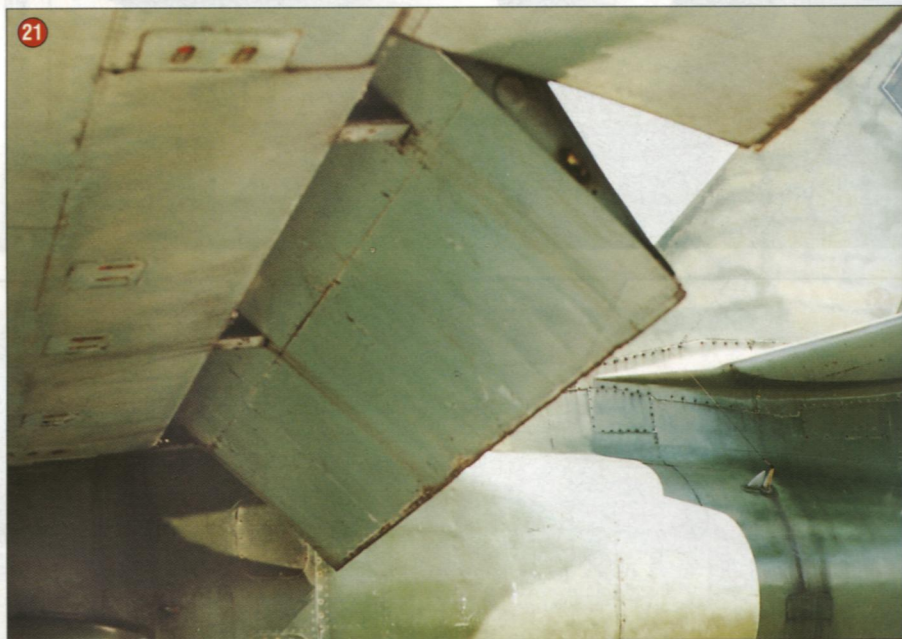
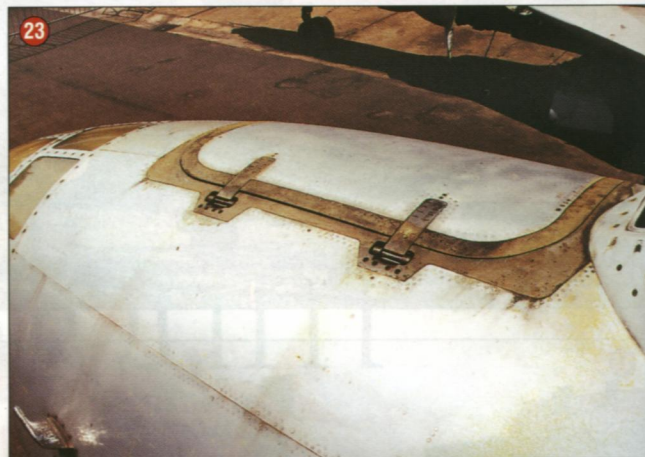
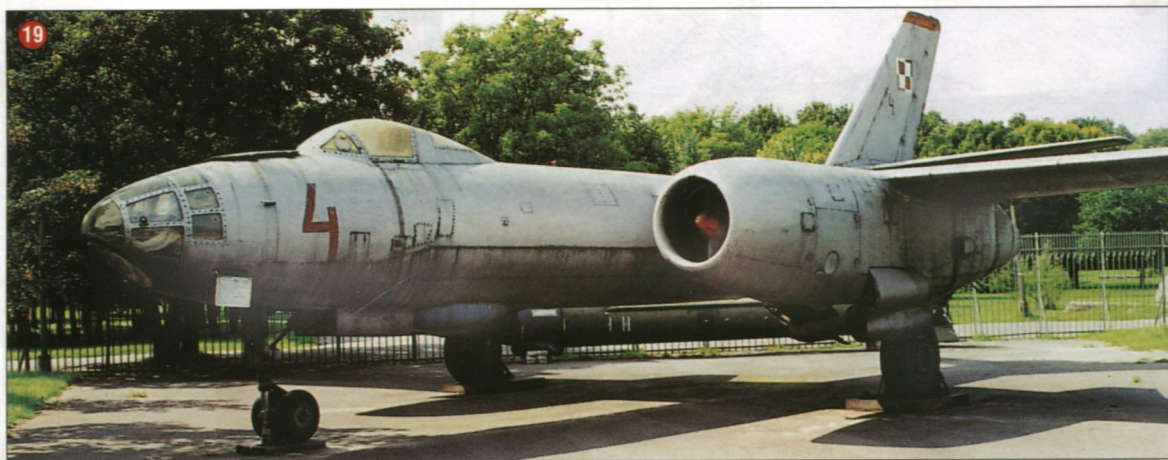
20. The nose of an East German Il-28

21. Il-28 - drooped (inner) flap

22. Navigation light on the wing tip

23. Navigator's hatch

24. Nose landing gear bay





25



26

25. Main landing gear

26. Main landing gear doors

27. Main landing gear leg and wheel (IL-28)

28. IL-K6 tail turret

29. Ilyushin IL-28 'Red 4' in the military museum in Poznan

30. IL-28R in the Polish Aviation Museum in Cracow

31. IL-28 preserved in the military museum in Drzonow

32. Training version IL-28U. This machine served in the 1970's with the Autonomous Reconnaissance Squadron of the Polish Navy, which was based at Siemrowice

33. The nose of the IL-28



31



33



28



27



32



29



30

34. The nose of training version - Il-28U

35. The canopy of the Il-28

36. The air intake of the VK-1 engine

37. The light in the engine nacelle

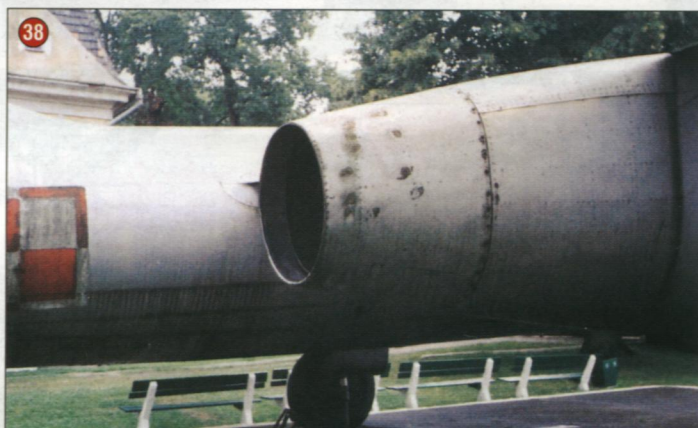
38. The rear section of the engine nacelle

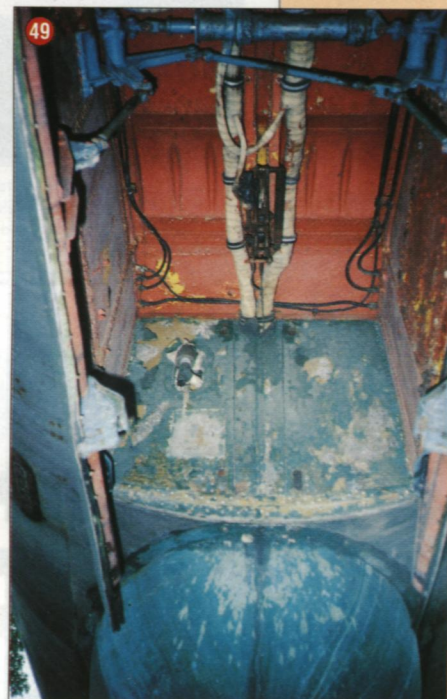
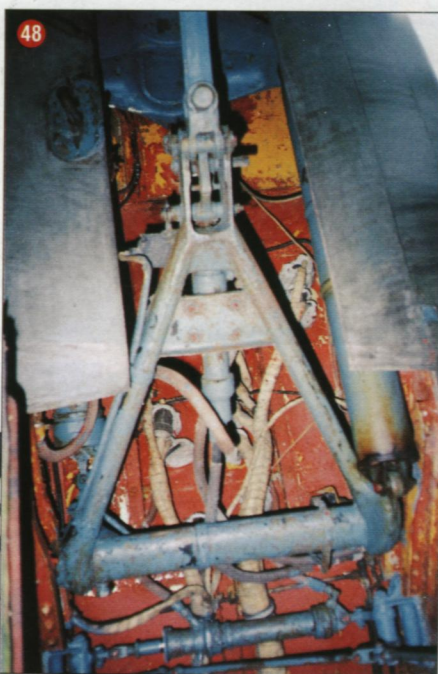
39. The tail gun turret (Il-K6)

40. The lower section of the tail gun turret

41. The vertical fin

42. The tail turret viewed from the starboard side





43. The radome of the PSBN-M search radar

44. The wing tip tanks of the Il-28R

45. The nose landing gear

46. Details of the oleo of the nose landing gear

47. The nose wheels

48. The retraction strut of the nose landing gear

49. The nose wheel well

50. The retraction strut of the main landing gear

51. The main wheels

52. The Bilek/Italeri kit of the Il-28 'Beagle'

53. Overall view of the model

54. Left side view

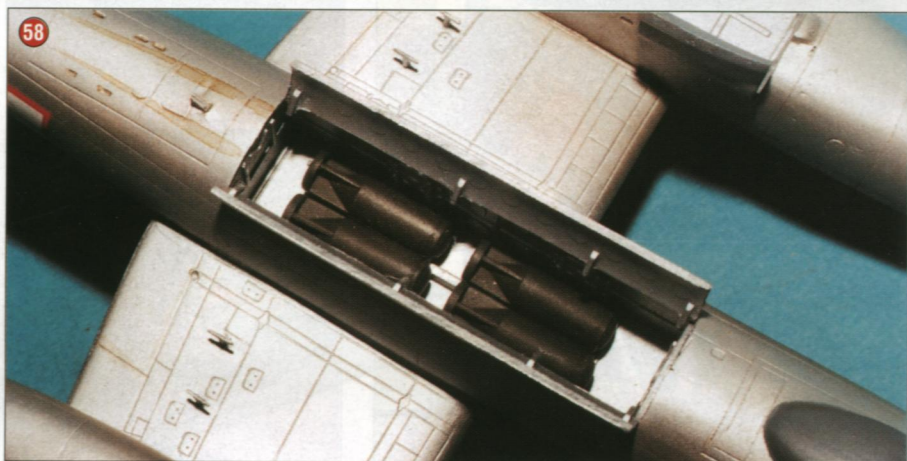
55. Details of the nose

56. Canopy and hatch for navigator in the open position

57. The tail turret

58. The bomb bay with four FAB-500 bombs. The Bilek/Italeri kit includes very interesting bomber armament, including a nuclear bomb

59. The nose wheel bay and oleo leg



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No. 953 Ilyushin IL-28U "Mascot"



No. 931 JU-188 A-3/E-2 "TORPEDOBOMBER"



No. 934 MiG 21-PFM "Fishbed F"



No. 931 MiG 21F "Fishbed C"



No. 961 JU-188 D-2 "NIGHTBOMBER"

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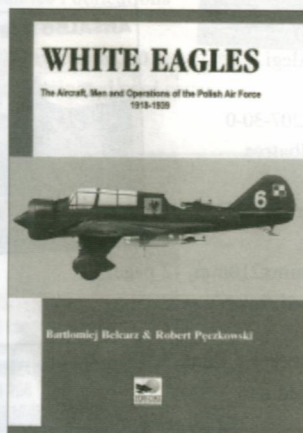
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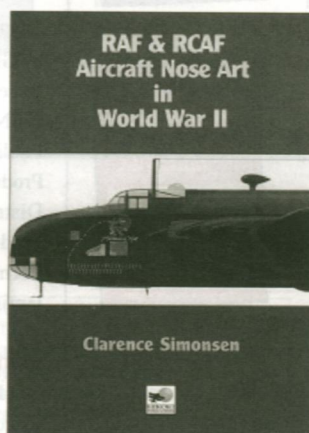
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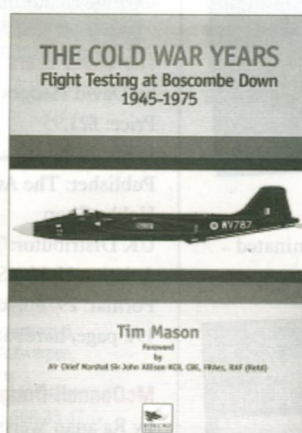
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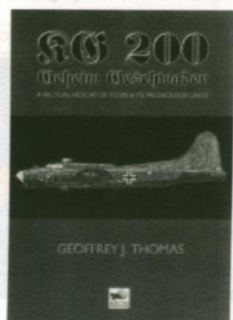
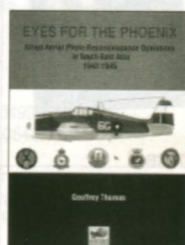
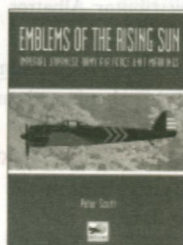
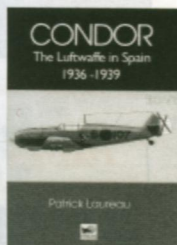
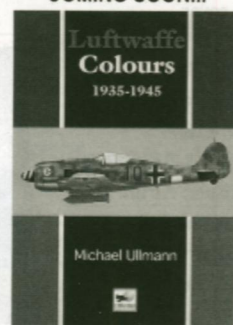
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What follows is a list of some of the most recently published aviation books available in the UK. If you have any problems in obtaining them, please contact the publisher or UK importer/stockist listed.

Fighter Command War Diaries - Volume 3, January 1942 to June 1943

by John Foreman
Price: £24.95
ISBN: 1-871187-39-7
Publisher: Air Research Publications

UK Distributor: Crécy Publishing
Format: 145mmx220mm, 396 page, hardback cover with separate colour dust jacket



Aérospatiale/British Aerospace Concorde - The History of Supersonic Transport

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ISBN: 1-84037-205-2
Publisher: Airline Publishing Ltd
UK Distributor: Airline Publishing Ltd
Format: 297mmx210mm, 128 page, laminated card cover



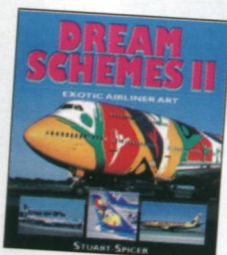
Boeing Stratocruiser

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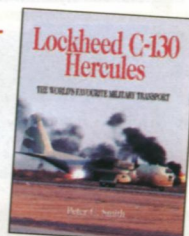
Dream Schemes II

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Lockheed C-130 Hercules - The World's Favourite Military Transport

by Peter C. Smith
Price: £30.00
ISBN: 1-84037-197-8
Publisher: Airline Publishing Ltd
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Battles with the Luftwaffe - The Bomber Campaign Against Germany 1942-1945

by Theo Boiten & Marton Bowman
Price: £29.99
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The Eagle Years 1948-1968

by David Hedges
Price: £21.95
ISBN: N/K
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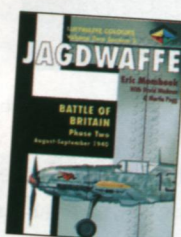
McDonnell-Douglas A-4 Skyhawk

by Ra'anana Weiss & Yoav Efrati
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Jagdwaaffe - Battle of Britain Phase 2

by Eric Mombeek
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American Eagles

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German Observers' Guns

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**Dornier Do 17Z and Junkers Ju 88A-4**

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ISBN: 952-5334-01-5

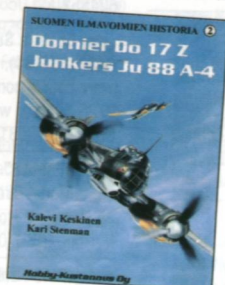
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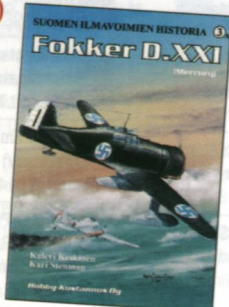
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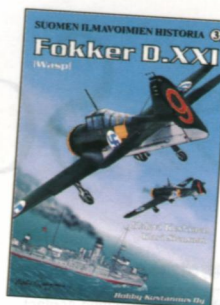
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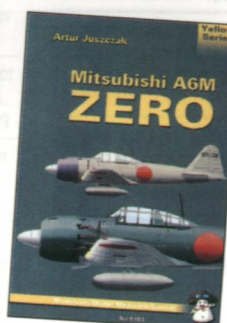
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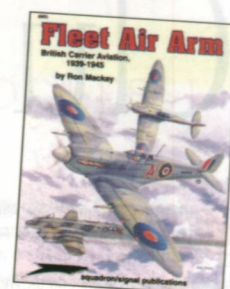
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AAM/IPMS Portugal Please contact Antonio Neves Santos - R. Prof. Camilo Oliverira, 86A - 4420 GONDOMAR or Tel: 02 4540525.

Allround Modelling Society Eeklo (Belgium) Contact modelbouw.eeklo@compagnet.be or visit our website at www.ping.be/modellbouw-eeklo

The Aberdeen Modellers Society Contact David Robertson, 27 Howes

Drive, Aberdeen. Tel: 01224 690895.

Abingdon IPMS For information contact Tony Clements on 01235 522893.

Airfix Collector's Club For more information contact Jeremy Brook, 29 Elley Green, Neston, Corsham, Wiltshire. SN13 9TX.

Aero Space & Vehicle Club Wombourne, Nr Wolverhampton. For details contact J. Van-Leerzem on 01384 278600.

IPMS Avon Contact Andy Hills (01454 618085) or Phil Evans (01454 852133).

Avro Lancashire IPMS Contact Ian. D. Southwood on 01706 224 798 or Email: ianD@KSouthwood.freemove.co.uk

Birmingham IPMS For more details call 0121 550 0515.

Bay Modellers Club Bay of Plenty, New Zealand. Contact Peter Cook on (NZ) 07-

575-6517 or Email FI-SH@extra.co.nz

Banbury Scale Model Club Contact Reg Gray on 01295 264875.

Barnet IPMS Contact Pete Stern (Secretary) on 020 8449 7854.

UMS (University Modelling Society) Birmingham meets every Thursday at Centre 13 Community Centre, School Road, Moseley, Birmingham.

IPMS Bolton For more details contact Richard on 01204 699379 or Email ipms.bolton@talk21.com.

Brampton Scale Model Club (Incorporating IPMS Brampton). Contact, Sam Bratby, 39 Ermine Way, Sawtry, Huntingdon, Cambs. PE17 5UQ. Tel: 01487 830689.

Chapitre Real Cote (Montreal, Canada). For information contact Jean Marc Perreault. Tel: 450 659 5241 Email: jmarcp@megaweb.ca

The Clacton Branch of the IPMS. Contact Peter Terry on 01255 428653.

IPMS Cleveland Contact: Mike Burns on 01642 592357 or Gary Stevenson on 01642 490589.

Coventry and Warwicks IPMS For more details contact Carl Lewis, Midland Air Museum, Rowley Road, Coventry Airport, Bagington. CV8 3AZ.

Coventry Diecast Model Club meets at the Midland Air Museum, Baginton, Coventry on the first Wednesday of each month. For more details contact John Print Tel: 024 764 57968 or Chris Sweetman Tel: 01509 853561.

Cornish Scale Modellers' Society. For more details contact Tim Rowley (Secretary), 45 Bodriggy St, Hayle. TR27 4ND Tel: 01736 757945 or Mike Fisher (Treasurer), 8 Porthbean Rd, Newquay TR7 3JE (Tel: 01637 874545).

Derby City Model Club Contact Gavin (10am to 6pm Saturdays) on 01332 757873 (Tel/Fax) or Julian (evenings) on 01332 514193.

IPMS Derby & District New branch secretary: Nick Allen, 8 Oakwood Close, Stenson Fields, Derby. DE24 3ET

IPMS-Deutschland e.V. Contact: Günther Lindow, Bergengrünstrasse 5-7, 14129 Berlin, Germany. Email: Volker.Helms@t-online.de.

East Kent Model Club meets in Ramsgate. For details contact Stu Davies on 01843 867404.

East Midlands Model Club Contact Gordon Upton on 01455 230952 (day) or 01455 878722 (evenings).

East NEUK Modelling Club For more information contact Brian on 01334 655131 or Dave on 01334 652439.

IPMS Essex/Harlow For details and an information sheet, please ring Steve Hubbard on 020 8514 3840 or 0860 228194.

Essex Scale Model Society For more information contact Dave on (01245) 604552.

Eastern Suburbs Scale Model Club (ESSMC), Box Hill, Vic, Australia. For more details contact Pete McKinnon, 61+3 9725 5480 or write to: 33 Clegg Ave, Croydon, Vic 3136, Australia.

"FAMAS" journal of the Frog & Airfix Model Aircraft Society. Contact: FAMAS, 35 Rosebery Road, Suffield Park, Cromer, Norfolk. NR27 0BX.

IPMS Fenland/Spalding Model Group Contact Mr B. Pickering 01775 710465.

Glasgow IPMS. Non-IPMS members welcome. Contact Bruce Smith on 0141 563 2098.

Gloucester IPMS Contact Jeff Brown, 123 Pleasant Way, Beeches Park, Cirencester. GL7 1BJ. Tel: 01285 659254.

Graham Model Club Contact John Tinkler on 01476 870816 or Craig Gardiner on 01476 401483.

Greater Peterborough Model Club Contact Roger Bolt, 24 Field Rise, Yaxley, Peterborough. PE7 3YT. Tel: 01733 706978 Email: rbolt@waitrose.com.

IPMS Greece (Corfu Branch) Contact 0030 661 41506 or Fax 0030 661 41114.

Guernsey Plastic Modellers Group Contact Dave Nash, 7 Pierre Perceé Villa, Prince Albert Road, St Peter Port, Guernsey. GY1 1EZ. Tel: 01481 728186.

The Harrow Modelling Society Contact Roger on 020 89976051 for more details.

Hobby Depot Modeler Club Contact M. Fuller, 1524 Est Summer St., Hartford, WI 53027, USA.

IPMS Hornchurch New Club Secretary: Dave Ryan, 36 The Lintons, Linton Road, Barking, Essex. IG11 8HS. Tel: 020 8594 4670.

Isca Scale Plastic Model Club - East Devon. Contact Mr K. Sweeting 10, Old Barn Close, Stokecanon, Exeter, Devon. EX5 4AD.

IPMS Kent For details contact Jim Chapman, 77 Sutherland Avenue, Petts Wood, Kent. BR5 1QY. Tel: 01689 822669.

IPMS Kingston (Canada) Contact Tony on 389 4878.

IPMS London For more details contact W. Arrowsmith, 14 Link Way, Hornchurch, Essex. RM11 3RW. Tel: 01708 473038. Email: southernexpo@yahoo.co.uk.

IPMS Provinces of France The URL for IPMS Provinces of France changed to <http://www.multimania.com/ipmspdf/index.htm>



CONTACTS & ADDRESSES

i **IPMS South Africa** For further details contact Colin Burgess on 011 462 3549 or Email albertn@global.co.za or visit our Website at www.kimberley.co.za/ipmssa.

IPMS South East London please ring Paul Brack on 020 8650 6504 or Alan Partington on 020 8697 6929.

IPMS Southampton For more details contact Nigel Robins on 02380 582808.

i **IPMS Ste Helene** (Montreal, Canada). For information contact Jean Marc Perreault. Tel: 450 656 7243.

i **IPMS Toronto** (Canada) Contact IPMS Toronto, 3219 Yonge St., Suite 334, Toronto, Ontario, M4N 2L3, Canada.

IPMS Wessex For more details contact Karen Robins on 02380 582808.

IPMS West Middlesex voted recently to NOT be an IPMS branch anymore. The club is therefore now known as West Middlesex Scale Model Club. For more information contact Don Sharpe on 01932 788548 or Tony Horton on 0208 3843840.

i **IPMS YU-Vojvodina** (Yugoslavia). Contact Nenad Mikisev, Bulevar Veljika Vlahovica 56/10, 23000 Zrenjanin, Yugoslavia. Email: modelart@ptt.yu

Junior Model Club Midland Air Museum, Baginton, Coventry. For more information contact Dianne James. Tel: 024 76301033

Lincoln Model Club (IPMS Lincoln). For more information, contact Ian Crawford on 01522 533380.

i **Kaimai Branch IPMS (NZ)** Contact Peter Cook at bmc-ipmsnz@xtra.co.nz or Tel: 07 5756 517

Keighley Plastic Model Society contact John on (01535) 665722.

Lothian Modellers Club and Edinburgh IPMS. For details contact Ian Hanratty on 0131 665 4087.

i **Maritzburg Modellers Club** South Africa Contact Andy Williams 0331-961-850 or Alan Farre 0332 306446.

Medway Modelling Club Gillingham, Kent. Contact Harry Greenwood 01634 829531 (daytime) or Bill Clark 01795 426686 (after 7pm).

Mercia Scale Modellers (incorporating IPMS Mercia). For more information contact Simon Mepstead, 7 Pembroke Way, Nuneaton, Warks. Tel: 02476 745551.

Merseyside Scale Model Club (IPMS) meet first Tuesday of the month at the Royal British Legion, Crosby Road North, Waterloo, L22 0LG.

Mildenhall Plastic Model Club For information contact Peter on 01638 742354.

Milton Keynes Model Club Contact Phil Smith on 01908 505988.

North Norfolk Model Group For more information contact P. Pegg on 07760 433734.

Norfolk Scale Aircraft Model Group For information call John Turner on 01603 890595.

North Essex Modellers Ring Jerry Baker on 01206 855080 or Mark Harris on 01206 842694 for details.

North Somerset Modellers Society For more information ring Fred Tooke on (01934) 416798.

North Staffs Model Club Contact Stefan on 01782 618181 or Phil on 01782 544612 for details.

Norwich Scale Model Group For more information please contact John Turner on 01603 890595.

Nottingham and District IPMS Contact James Downham, 17 Quantock Close, Nottingham, NG5 9QA or Tel: 0115 2696799

Greater Peterborough Model Club For details ring Jim Sylvester on 01733 571728.

The Pensnett Model Makers Society For more details contact John Boucker on 01384 834437.

Plymouth Scale Model Association Contact Roger Haskell on 01752 267527 after 6pm.

i **PMC Koeln e.V. Germany.** For more information contact Michael Winkler, Mertener Str.6, D-50321 Bruehl, Germany or Email: nc-winklemi@netcologne.de

Poole Scale Modellers Contact Malcolm on 01202 694037.

Poole Vikings Model Club (Incorporating Dorset IPMS). For more details contact Paul Moores on 01202 483932.

Robertsbridge Aviation Society Model Club. Please contact David Morrice, 27 Derwent Drive, Tunbridge Wells, Kent. TN4 9TB Tel: 01892 520856

Romsey Modellers meet third Thursday of the month at the The Red Cross Hall, Great Well Drive, Romsey. For further information contact Les Cooper, 28 The Tyleshades, Romsey. SO51 5RJ. Tel: 01794 522968.

Salisbury IPMS. Please contact: Peter James, 'Lithlorien', 18 Ilyton Avenue, Firsdown, Salisbury, Wilts, SP5 1SH. Tel 01980 862403.

Shropshire Scale Modellers (IPMS Telford). Contact Gary Stevens, 8 Whittemere Road, Shrewsbury. SY1 3BT.

Southend-on-Sea Model Club (South East Essex IPMS). Contact Dean on 01702 603031 to 01702 467230

South London Scale Model Club For details and an information sheet, please ring Steve Hubbard on 020 8514 3840 or 0860 228194.

i **South Shore IPMS** Pembroke, MA (USA). For more details contact Bob Burnside Tel: 617 659 4883.

St. Edmundsbury Scale Modellers Contact Rod Jones (Secretary) on 01284 - 766104.

Stafford IPMS Model Club For information contact: Terry Campion, 3 Leedhams Croft, Walton-on-Trent, Swadlincote, Derbyshire. DE12. Tel: 01283 713602.

Stirling & District Modellers Society SAE for programme to W.Wood, 37 Woodlands, Sauchie, Clacks. FK10 3PJ. Tel: 01259 722428.

Sunderland Scale Model Club meets in Fulwell, Sunderland. Contact Peter Hall 0191 513 0489 or David Dykes 0191 548 7777.

Sussex Model Group For information please contact 01403 782638.

North Surrey Military Modelling Group For more information contact Keith Goldworthy on 020 887327886 or Kevin Jarrett on 020 83938534. Alternatively you can Email the club at nsmmc@cwcom.net

Sutton Coldfield Model Makers' Society For more information contact Robert Day, 'Ashgrove', Dingley Lane, Fillongley, Coventry. CV7 8DQ. Tel: 01676 540469.

Tayside Modelling Society Details from Keith Herd, 38 Ashgrove, Perth. Tel 01738 629555 (Sorry no under 16's):

i **The Oklahoma Historical Modelers Society** For more information contact David Kimbrell at ivandak@aol.com or Rick Jackson at rjackson@socket.net.

Thurrock Scale Model Club For more information please contact John Davies on 01375 406895 or Steve Moore on 0708 853139.

Thames Valley Scale Models Club For more details contact Hugh Beyts on 0118 9477581 or Email: hughbeyts@patrol.i-way.uk.

Wallingford (IPMS) For more details contact Club Secretary Steve Lovelock on 01235 210277 or George Clark on 01491 201902.

Warrington (IPMS) For details contact Dave Foxall on 01925 825619.

Watford Model Club For more information contact Nigel Foster on 01525 384875.

West Middlesex IPMS Contact Les Clancy on 01784 465191 or Tony Horten on 020 8384 3840 for details.

West Riding IPMS For more information contact the Club Secretary, Chris Norfolk on 0113 2176325 or Email: cnorfolk@cwctv.net.

York & District Plastic Models Society Contact Chris on 01430 873408 or Joel on 01904 766895.

New Model Clubs Forming

New club in Henley-on-Thames For more information contact Tyrone Trimmings on 01491 574407 or Email: trimmings@hotmail.com.

Special Interest Groups

i **The IPMS Racing & Record Aircraft SIG** For more information about the SIG and our quarterly newsletter ('Bent Throttles') contact Anders Brunn, Bradstupsvagen 21, SE-129 39 Hagersten, Sweden. Email: anders.brunn@telia.com.

World War One SIG has a new website at <http://www.users.globalnet.co.uk/~ipmsuk/wingswiresig.htm>

Wings 'n' Wires IPMS World War I Aircraft SIG Contact Alan Crow, 55 Morven Lea, Blaydon, Tyne & Wear. NE21 4EY.

IPMS UK Fleet Air Arm SIG For more details contact Steve Hubbard on 020 8514 3840.

Police SIG For more information contact Bill Robinson, 94 Gillingham Road, Sunderland, Tyne & Wear. SR4 8LA. Tel: 0191 534 7590.

Formula 1 & Motorsport SIG Contact Nicholas Hazleton, 97 Boundary Lane, Saltney, Chester, Cheshire. CH4 8PL. Fax: 01244 683856 Email: n.hazleton@ukonline.co.uk

i **SIGPMA** a new SIG for all those interested in Portuguese Military Aviation. Contact: P.O. Box 52054, 4202 - 801 Porto, Portugal. Email: ruidom@mail.telepac.pt

i **YU Aviation SIG** Please note that this group's Email address has changed from modelart@ptt.yu to yasig@eunet.yu. The group also has a new postal address; Nenad Mikusev, Novosadskog Sajma 16/301, 21000 Novi Sad, Yugoslavia.

i **Yugoslav Aviation SIG** discussion board at <http://disc.server.com/58276.html>.

i **I am currently trying to revive the 1/144th scale military aircraft SIG.** If anyone is interested in joining please contact David Campbell, Faircroft, 3 High Street, Stanwick, Northants. NN9 6QA or Email David.Campbell@Tesco.net.

Web Guide

CURRENT SITES OF INTEREST



Webmasters

If you have any other sites you would like adding to this page, or run one and would like it included, please send the full URL details to us at the editorial address.

Wrong URL?

If your site is here, but has the wrong URL, let us know and we will correct it.

Model Manufacturers

www.academyhobby.com	Academy
www.aoshima-bk.co.jp	Aoshima (Japanese Only)
www.dragon-models.com	Dragon
www.ertltoys.com	ERTL
www.hasegawa-model.co.jp	Hasegawa (Japanese Only)
www.hobbycraft.com/team.html	Hobbycraft
www.italeri.com	Italeri
www.msap.com	Ministry of Small Aircraft Production
www.mpm.cz	MPM/Azur/CMK
www.revell-monogram.com	Revell-Monogram
www.revell.de	Revell AG (Germany)
www.tamiya.com	Tamiya
www.testors.com	Testors

After Market Accessories and Tools

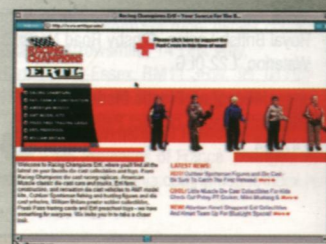
www.mindspring.com/~transerman	Archer Fine Transfers
200.23.238.36/aztec	Aztec Decals
www.mondenet.com/~belcher	Belcher Bits
www.concentric.net/~Thecoles/cobra.html	Cobra Company
www3.glo.be/daco	Daco Products
www.dekno.com	Dekno
www.eduard.cz	Eduard M.A.
www.clever.net/dfk/experten/experten.html	Experten Decals
www.tbaytel.net/fldecs/decp2.htm	Flightdecs
www.jaguarmodels.com	Jaguar
www.pci.on.ca/~macnamar/ipms/leading_edge.html	Leading Edge Models
www.lonestarmodels.com	Lone Star Models
dSPACE.dial.pipex.com/town/place/gfb78	MDC
www.modelspot.com/neomega/neomegahome.htm	Neomega
www.clever.net/dfk/com/paragon/paragon.html	Paragon Designs
www.skylancerdecals.com/	Skylancer Decals
www.dhcinc.com/superscale/	Superscale International
www.elements.nl/verlinden/indexEN.html	Verlinden/Main
www.verlinden-productions.com/	Verlinden Productions
www.vls-vp.com	VLS (SA)
www.artproducts.com/mweb/badger.htm	Badger Airbrush
www.gremlins.com/bmf	Bare-Metal Foil
www.dremel.com	Dremel
www.flexlight.demon.co.uk	Flexi-Light
www.freenet.edmonton.ab.ca/gryphon/index.html	Gryphon Models
www.clever.net/dfk/com/snj/snj.html	SNJ Model Products
www.meteorprod.com	Cutting Edge/Meteor Productions

Modelling Sites

www.ping.be/~ping1076/ipms/ipms.html	IPMS Branches
www.ping.be/ipms-belgium"	IPMS/Belgium
www.ipmscanada.com/"	IPMS/Canada
personal.eunet.fi/pp/vmhalme/ipms/home.html	IPMS/Finland
www.multimania.com/ipmspdf/index.htm"	IPMS/Provinces de France
http://www.i-france.com/ipms-france"	FFMP-IPMS France
www.iline.it/cil/ipmsmi/"	IPMS/Italy
ping4.ping.be/~pin15471/index2.shtml"	MATLAN (Belgium)
www.geocities.com/CapeCanaveral/Hangar/1375/	IPMS/Norway
mailto:ipms_singapore@yahoo.com mail for	IPMS/Singapore
www.remotecom.se/ipms	IPMS Stockholm
www.kimberley.co.za/ipmsa"	IPMS/ZA (South Africa)
www.ipms.ch/	IPMS/Switzerland
www.users.globalnet.co.uk/~ipmsuk/	IPMS UK
www.ipmsusa.org/	IPMS/USA
tacair-press.com/asm.shtml	IPMS/ASM
www.index.net/novamodeler/	IPMS North Virginia
pmms.webace.com.au/	Perth Military Modelling Society
www.users.globalnet.co.uk/~garys	Aeroatic Display Teams SIG
ourworld.compuserve.com/homepages/geoff_trenholme	Czech & Slovak SIG
www.almansur.com/aviation/bearcat/index.html	F8F Bearcat Memorial
www.almansur.com/aviation/f86fdetail	F-86F Modelers Detail
www.faasig.org	Fleet Air Arm SIG
users.atcon.com/~hawker/hawker.htm	Hawker Hurricane
www.geocities.com/CapeCanaveral/2874	MiG Alley
www.5chr.freemove.co.uk	Heli-kit News
www.acm.cps.msu.edu/~kortasma/spitfire.html	Supermarine Spitfire
dialspace.dial.pipex.com/town/estate/nr49/usnair/	US Naval Aircraft SIG
www2.magmacom.com/~trea/faadecol.htm	Commonwealth Naval Aviation Decals
www.swan.ac.uk/mateng/gavins/refs.htm	Gavin's Paint Charts (Paint Conversions)
www.j-aircraft.com/	Japanese Aircraft & Ship Modelling
members.aol.com/billbayer/kcchome.htm	Kit Collector's Corner
www.kitmaster.mcmall.com/index.htm"	Kitmaster Collectors
www.copetel.com.ar/webs/marber/	Personal site of Eduardo Enrique Marber
www.feist.com/~downen/	Modeler's Home Page
www.schifferbooks.com/military/	Schiffer Books
www.zercom.net/~jmarcp/	The Official Parts Yard by Jean-Marc Perreault
www.buffnet.net/~tonym/models.htm	Tony Matteliano's Scale Model Bookmarks

Aircraft-Specific Sites

skyraider.org	A-1 Skyraider Site
members.aol.com/A6E/intruder.html	A-6 Intruder
cust2.iamerica.net/blade	A-10 Warthog
www.b24bestweb.com	B-24 Liberator
www.myring.demon.co.uk/beau/	Beaufighter Squadrons
cellmath.med.utoronto.ca/B47/Bell_47.html	Bell 47
www.spectrumwd.com/c130/index.sht	C-130 Hercules
www.stringbag.demon.co.uk/hhnters.htm	Ex FRADU Hunters home page
www.js-net.com/phantom/phantom.htm	F-4 Phantom Site
tacair-press.com/research/northrop.shtml	Northrop F-5E/F & F-20
studwww.rug.ac.be/~svhastel/	349 Squadron F-16 Site
www.geocities.com/CapeCanaveral/5415/toff.html	F-16 Israeli Website





www.uta.fi/~nz55955/hornet.html	FA-18 Hornet
www.mil.fi/trsqn21	F-18 Hornets of Fighter Sqn 21 Finnish Air Force
tacair-press.com/research/hun.shtml	F-100 Super Sabre
www.ecn.net.au/~sheeran/f-111.html	F-111 Page
tacair-press.com/research/huskie.shtml	Kaman HH-43 Huskie
www.lightning.org.uk/	Lightning Website
www.geocities.com/CapeCanaveral/8280/helis.html*	MD500/OH-6 Website
www.geocities.com/CapeCanaveral/8663/index.html	Messerschmitt Me262
gramercy.ios.com/~tkraft/mig.htm	MiG-21
www.mygale.org/04/mteiten/m2ftitre.htm	Mirage 2000 site
www.mygale.org/04/mteiten/m1titre.htm	Mirage F.1 Site
www.navy.mil/homepages/viking/	S-3B Viking Community
www.skyhawk.org	Skyhawk Association
www.eracer.org/hangar_html/spitfire/spitlink.htm	Spitfire Links around the World
www.stringbag.demon.co.uk/	The Stringbag Sites
www.geocities.com/Pentagon/7002	Thud Ridge (F-105 in Combat)

Air Power Reference Sites

www.army.mod.uk	British Army
www.mat.ufrgs.br/~rudnei/FAB/english.html	Brazilian Air Force
www.hkkk.fi/~yrjola/war/faf/faf.html	Finnish Air Force
www.geocities.com/CapeCanaveral/8497	Guatemalan Air
www.hellas.org	Hellenic Air Force
www.bharat-rakshak.com/IAF	Indian Air Force
www.cae.wisc.edu/~wei-bin/homepage.html	Israeli Defense Forces
www.jda.go.jp/jasdf/indexE.htm	Japan Air Self Defense Force
www.geocities.com/Pentagon/2815	ROC (Taiwan) Air Force
www.raf.mod.uk	Royal Air Force
www.adfa.oz.au/DOD/RAAF	Royal Australian Air Force
www.achq.dnd.ca	Royal Canadian Air Force
www.euronet.nl/users/woklu	Royal Netherlands Air Force
www.canit.se/%7Egriffon/aviation/	Swedish Air Force
www.mindef.gov.sg/rsaf*	Singapore Air Force
www.af.mil	United States Air Force
www.usafe.af.mil	United States Air Forces Europe
www.uscg.mil/images/photos/	US Coastguard

Aircraft Museums & Collections

www.rafmuseum.org.uk/fiat/cosford/	RAF Museum, Cosford
www.avdigest.com/aahm/aahm.html	American Airpower Heritage Museum
www.users.nwark.com/arkairmuseum	Arkansas Air Museum
www.motor-software.co.uk/brooklands/index.html	Brooklands Museum
webdirect.com/~cmft/index.htm	Canadian Museum of Flight
www.aviation.nmstc.ca	Canadian National Aviation Museum
www.warplane.com	Canadian Warplane Heritage Museum
www.mae.org	Air & Space Museum, Le Bourget, France
www.nasma.com	National Air & Space Museum of Australia
www.naval-air.org	National Museum of Naval Aviation
nzfpm.dcc.govt.nz/nzfpm/nzfpm.htm	New Zealand Fighter Pilots' Museum
www.rafmuseum.org	RAF Museum, Hendon
www.mainstream.com/rhinebeck.html	Rhinebeck Aerodrome Museum
www.nasm.si.edu	Smithsonian National Air and Space Museum
esu3.esu3.k12.ne.us/districts/ralston/ms/sac.html	Strategic Air Command Museum
www.wpafb.af.mil/museum	United States Air Force Museum
www.harringtonmuseum.org.uk	Carpetbaggers Aviation Museum

Aircraft Manufacturers

www.airbus.com	Airbus Industrie
www.bae.com	British Aerospace
www.boeing.com	Boeing Company
www.cae.wisc.edu/~wei-bin/homepage.html	Dassault Aviation
www.eurocopter.com	Eurocopter Consortium
www.lmco.com	Lockheed Martin
www.lmsw.external.lmco.com/lmsw/	Lockheed Martin Skunk Works
www.lmco.com/photo/a-z.html	Lockheed Martin Photo Archive
www.northgrum.com	Northrop-Grumman
www.raytheon.com/rac	Raytheon Aircraft
vanguard.sikorsky.com/index.html	Sikorsky
www.x-cd.com/westland	Westland Helicopters

Photographic Sites

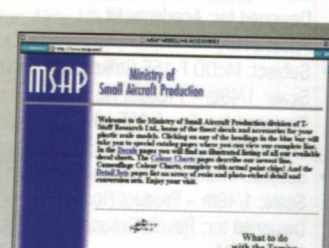
www.ndirect.co.uk/~rt-jackson	A J Jackson Photographic Collection
users.aol.com/jamesr27h/nart/nart.html	Aircraft Nose Art
www.totavia.com/imagearchive	Aviation
www.dfr.nasa.gov/	NASA/Dryden Research Aircraft Photo Archive
www.compulink.co.uk/~panic/	Paul's Plane Page
mypage.direct.ca/m/martin11/	Martin Slides (RCAF and others)

Other Military Aviation Sites

www.carnut.com/mylinks/aircraft.html	Aircraft Links
www.dm.af.mil/amarc/default.htm*	AMARC
www.vhome.com	Aviation Home Page
www.cae.wisc.edu/~wei-bin/homepage.html	Aviation Resources
www.nol.net/~sluggo	Luftwaffe Fighter Page
www.clark.net/pub/royfc/ru_acft.html	Roy's Russian Aircraft
	Resource
aeroweb.lucia.it/~agretch/RAPhtml	Russian Aviation Page
www.dhc.net/~weasels	Wild Weasel Homepage
www.vpnavy.com/	US Navy Patrol Squadrons
www.vpnavy.com/raaf.html	RAAF Maritime Patrol Squadrons
www.vpnavy.com/models.html	VP site directory of Model Aircraft
www.hurricanehunters.com	53rd Weather Reconnaissance Sqn USAF
www.quokka.com/ema/hcs-5/	HCS - 5 Firehawks US Navy HH60H Sqn
www.classicjets.co.za/	Classic Jets South Africa
collectorsnet.com/milhist	8th Air Force in World War II
www.fgi.net/~rdoughty/tfw.html	12th Tactical Fighter Wing
home.worldonline.nl/~cschoute/home.html	32nd TFS Association
www.texaslink.com/vf201/	VF201 US Navy Tomcats
www.mindspring.com/~total_health/38trs/38trs.htm	38 TRS Homepage
www.geocities.com/CapeCanaveral/Lab/4596	50 FW/Hahn AB
www.topedge.com/panels/aircraft/sites/kopack/	Phantom Productions

Note:

The publisher has no direct or indirect connection with any of the above-listed sites (unless noted otherwise). While every care is taken in the compilation of this list, the publisher cannot be held liable for any errors or omissions. Nor can the publisher accept responsibility for the bone fides of these sites.



Scale News

ALL THE LATEST STUFF

What follows is a comprehensive list of all the latest aviation kits, accessories and decals. UK prices have been included where known.

NOTE: For full reviews of all of the items below, please see Vol 7 Iss 11 and Vol 7 Iss 12 of our sister magazine, Scale Aviation Modeller International.

KITS

Mil Mi-1MG

Scale: 1/72nd
Kit No: 7238
Price: £TBA
Status: New Tooling ✓
Type: Limited-run Injection Moulded Plastic
Manufacturer: A-Model (Ukraine)
UK Importer: Pocketbond Ltd



Bristol Beaufort Mk I

Scale: 1/144th
Kit No: ASP 010
Price: £TBA
Status: New Tooling ✓
Type: Resin, White-Metal & Vac-formed Clear Plastic
Manufacturer: Air-Spede Models (UK)

Christen Eagle II

Scale: 1/32nd
Kit No: N/A
Price: \$85.00 + \$9.50 P&P
Status: New Tooling ✓
Type: Resin, White-Metal, Etched Brass & Vac-formed Clear Plastic
Manufacturer: Airshow Models (Canada)
Obtain in UK via: MDC



Bristol M.1C

Scale: 1/48th
Kit No: BM115
Price: £21.99
Status: New Tooling ✓
Type: Limited-run Injection Moulded Plastic & Pewter
Manufacturer: Blue Max (UK)



Halberstadt D.II

Scale: 1/72nd
Kit No: 2022
Price: £11.99
Status: New Tooling ✓
Type: Limited-run Injection Moulded Plastic & Pewter
Manufacturer: Pegasus (UK)



Vickers FB.5 'Gun Bus'

Scale: 1/72nd
Kit No: 3009
Price: £11.99
Status: New Tooling ✓
Type: Limited-run Injection Moulded Plastic & Pewter
Manufacturer: Pegasus (UK)



Ryan 'Spirit of St. Louis'

Scale: 1/160th
Kit No: B002
Price: £TBA
Status: New Tooling ✓
Manufacturer: AeroBase (Japan)



Sukhoi Su-2R

Scale: 1/72nd
Kit No: 72082
Price: £TBA
Status: Reissue (New Decals) ✓
Manufacturer: ICM (Ukraine)
UK Importer: Amerang Ltd



V.S. Spitfire Mk VIII

Scale: 1/48th
Kit No: JT81
Price: £14.99
Status: Revised Tooling ✓
Type: Injection Moulded Plastic
Manufacturer: Hasegawa (Japan)
UK Importer: Amerang Ltd



ACCESSORIES

Aires (Czech Republic)

Resin & Etched Brass Accessoires, Updates & Conversions

- Subject: Messerschmitt Me 262A Cockpit Set
Scale: 1/72nd – Product No.: 7063
Designed for: Revell kit
Price: £TBA
- Subject: De Havilland Mosquito NF Mk II/FB Mk VI
Scale: 1/72nd – Product No.: 7077
Designed for: Tamiya kits
Price: £TBA
- Subject: MiG-29A Cockpit Set
Scale: 1/48th – Product No.: 4074
Designed for: Academy kit
Price: £TBA
- Subject: McD D F-15E Strike Eagle Exhaust Nozzles
Scale: 1/48th – Product No.: 4115
Designed for: Any F-15E kit
Price: £TBA
- Subject: Messerschmitt Me 262A Gun Bay
Scale: 1/48th – Product No.: 4116
Designed for: Revell, Dragon/Trimaster kits
Price: £TBA

- Subject: LTV A-7D Corsair II Cockpit Set
Scale: 1/48th – Product No.: 4117
Designed for: Hasegawa kit
Price: £TBA

PART (Poland)

Etched Brass Accessoires

- Subject: Messerschmitt Bf 109G-14
Scale: 1/72nd – Product No.: S72-173
Designed for: Academy kit
Price: £TBA
- Subject: Yak-1
Scale: 1/72nd – Product No.: S72-174
Designed for: A-Model kit
Price: £TBA

AIRMO (Poland)

Turned Aluminium Accessoires

- Subject: Junkers Ju 87G-2 Cannon Barrels
Scale: 1/72nd – Product No.: AIRMO 72701
Designed for: Italeri kit
Price: £TBA

- Subject: Henschel Hs 129B-3 Cannon Barrels
Scale: 1/72nd – Product No.: AIRMO 72702
Designed for: Italeri or Revell kits
Price: £TBA
- Subject: Junkers Ju 87G-2 Cannon Barrels
Scale: 1/48th – Product No.: AIRMO 48701
Designed for: Hasegawa kit
Price: £TBA

Neomega (Russia)

Resin Accessoires

- Subject: Panavia Tornado GR.1/IDS
Scale: 1/48th – Product No.: C45
Designed for: Italeri kit
Price: £17.50

Flightpath (UK)

Resin, Etched Brass & White-Metal Accessoires

- Subject: BAe Hawk T.1/T.1A Detail & Weapons Set
Scale: 1/72nd – Product No.: N/A
Designed for: Italeri kit
Price: £18.90
- Subject: Sepecat Jaguar GR.1A/GR.1B Detail & Weapons Set

McDonnell F2H-3/4**Banshee**

Scale: 1/72nd
 Kit No: 1626
 Price: £7.99
 Status: Reissue ✓
 Type: Injection Moulded Plastic
 Manufacturer: Academy Plastic Model Co., Ltd (Korea)
 UK Importer: Toyway

**Focke-Wulf Fw 190D-9**

Scale: 1/72nd
 Kit No: 0874
 Price: £4.99
 Status: Reissue ✓
 Type: Injection Moulded Plastic
 Manufacturer: Smer (Poland)
 UK Importer: Pocketbond Ltd

**MBB EC-135 'Helicops'**

Scale: 1/32nd
 Kit No: 04474
 Price: £13.99
 Status: Updated Tooling ✓
 Type: Injection Moulded Plastic
 Manufacturer: Revell AG (Germany)
 UK Importer: Revell AG (UK Branch)

**Fokker D.VII****(OAW - Early Production)**

Scale: 1/72nd
 Kit No: 013
 Price: £TBA
 Status: Revised Tooling ✓
 Type: Injection Moulded Plastic
 Manufacturer: Roden (Ukraine)
 UK Importer: Pocketbond Ltd

**Sukhoi Si-15TM**

Scale: 1/72nd
 Kit No: 7263
 Price: £TBA
 Status: New Tooling ✓
 Type: Limited-run Injection Moulded Plastic
 Manufacturer: A-Model (Ukraine)
 UK Importer: Pocketbond Ltd

**MBB EC-135 'Army'**

Scale: 1/32nd
 Kit No: 04465
 Price: £13.99
 Status: Updated Tooling ✓
 Type: Injection Moulded Plastic
 Manufacturer: Revell AG (Germany)
 UK Importer: Revell AG (UK Branch)

**Lockheed Hudson****Mk III/IV/V/VI & P80-1**

Scale: 1/48th
 Kit No: 449
 Price: £39.95
 Status: New Tooling ✓
 Type: Limited-run Injection Moulded Plastic, Resin & Vac-formed Clear Plastic
 Manufacturer: Classic Airframes (USA)
 Obtain in UK via: Hannants

**Junkers Hu 52/3m****'Airline Version'**

Scale: 1/48th
 Kit No: 04558
 Price: £29.99
 Status: Updated Tooling ✓
 Type: Injection Moulded Plastic
 Manufacturer: Revell AG (Germany)
 UK Importer: Revell AG (UK Branch)

**Focke-Wulf Fw 190A-5/F-8**

Scale: 1/72nd
 Kit No: 0873
 Price: £4.99
 Status: Reissue ✓
 Type: Injection Moulded Plastic
 Manufacturer: Smer (Poland)
 UK Importer: Pocketbond Ltd

**Fokker D.VII****(OAW - Mid Production)**

Scale: 1/72nd
 Kit No: 029
 Price: £TBA
 Status: Revised Tooling ✓
 Type: Injection Moulded Plastic
 Manufacturer: Roden (Ukraine)
 UK Importer: Pocketbond Ltd

**Reggiane Re.2000**

Scale: 1/48th
 Kit No: 419
 Price: £19.95
 Status: New Tooling ✓
 Type: Limited-run Injection Moulded Plastic, Resin & Vac-formed Clear Plastic
 Manufacturer: Classic Airframes (USA)
 Obtain in UK via: Hannants



Scale: 1/72nd – Product No.: N/A

Designed for: Hasegawa kit

Price: £16.90

- Subject: Panavia Tornado GR.1/GR.1A Detail & Weapons Set

Scale: 1/72nd – Product No.: N/A

Designed for: Hasegawa or Revell kits

Price: £18.90

- Subject: Panavia Tornado F.3 Detail & Weapons Set

Scale: 1/72nd – Product No.: N/A

Designed for: Hasegawa kit

Price: £16.90

- Subject: AN/ALQ-131 ECM Pod

Scale: 1/32nd – Product No.: N/A

Designed for: F-4G, F-16 & A-10 kits

Price: £6.90

- Subject: AGM-65 Maverick Missile

Scale: 1/32nd

Product No.: N/A

Designed for: F-4G, F-16 & A-10 kits

Price: £10.90

- Subject: AGM-88 HARM Missiles

Scale: 1/32nd – Product No.: N/A

Designed for: F-4G, F-16 & F/A-18 kits

Price: £12.90

- Subject: RAF Weapons Trolley Set

Scale: 1/32nd

Product No.: N/A

Price: £22.90

Model Design Construction (UK)

Resin Conversions & Accessoires

- Subject: Junkers Ju 52 Floatplane

Scale: 1/48th – Product No.: CV032

Designed for: Revell & Revell-Monogram kits

Price: £TBA

- Subject: Junkers Ju 88H-1

Scale: 1/48th – Product No.: CV047

Designed for: Revell & Revell-Monogram kits

Price: £TBA

- Subject: BMW Engines

Scale: 1/48th – Product No.: CV048

Price: £TBA

Vintage (Italy)

Resin Conversion

- Subject: McD D AV-8B+

Scale: 1/72nd – Product No.: N/K

Designed for: Hasegawa kit

Price: £TBA

Model Alliance (Australia)

Resin Conversion

- Subject: BAe Hawk 127

Scale: 1/72nd – Product No.: CS-27

Designed for: Italeri kit

Price: £TBA

Heritage Aviation (UK)

Resin Conversion

- Subject: V.S. Spitfire Mk VI

Scale: 1/24th – Product No.: HACV 24003

Designed for: Airfix Mk V kit

Price: £TBA

Mister Kit (Italy)

Resin Conversion

- Subject: Reggiane Re.2001 Night Fighter, Bomber & Photo-Reconnaissance

Scale: 1/48th – Product No.: N/K

Designed for: Classic Airframes kit

Price: £TBA

Dassault Mirage IIIBS/DS & IAI Nesher two-seater

Scale: 1/72nd
Kit No: 72052
Price: Aus \$36.00
Status: Reissue ✓
Type: Limited-run Injection Moulded Plastic,
White-Metal, Resin & Vac-formed Clear Plastic
Manufacturer: High Planes Models (Australia)
Obtain in the UK via: Hannants



Republic P-47N Thunderbolt

Scale: 1/72nd
Kit No: 72051
Price: Aus \$22.00
Status: Reissue ✓
Type: Limited-run Injection Moulded Plastic,
White-Metal & Vac-formed Clear Plastic
Manufacturer: High Planes Models (Australia)
Obtain in the UK via: Hannants



Douglas P-70 & Havoc Mk II

Scale: 1/72nd
Kit No: 72055
Price: Aus \$36.00
Status: Reissue ✓
Type: Limited-run Injection Moulded Plastic,
White-Metal, Resin & Vac-formed Clear Plastic
Manufacturer: High Planes Models (Australia)
Obtain in the UK via: Hannants



MiG-15bis

Scale: 1/32nd
Kit No: 02204
Price: £12.95
Status: New Tooling ✓
Type: Injection Moulded Plastic
Manufacturer: Trumpeter (China)
Sample via: Pocketbond Ltd



Bristol Beaufort Mk I

Scale: 1/72nd
Kit No: 72053
Price: Aus \$36.00
Status: Reissue ✓
Type: Limited-run Injection Moulded Plastic,
White-Metal, Resin & Vac-formed Clear Plastic
Manufacturer: High Planes Models (Australia)
Obtain in the UK via: Hannants



Douglas A-20A Havoc & Boston III

Scale: 1/72nd
Kit No: 72056
Price: Aus \$36.00
Status: Reissue ✓
Type: Limited-run Injection Moulded Plastic,
White-Metal & Vac-formed Clear Plastic
Manufacturer: High Planes Models (Australia)
Obtain in the UK via: Hannants

IMAM Ro.57bis

Scale: 1/48th
Kit No: N/A
Price: £TBA
Status: New Tooling ✓
Type: Resin, White-Metal, Photo-etched Brass &
Vac-formed Clear Plastic
Manufacturer: Vintage (Italy)
Obtain via: Mister Kit



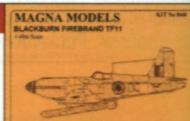
Hawker Hurricane Mk I

'Tropical Type'
Scale: 1/144th
Kit No: 14105
Price: £5.75 (¥1000)
Status: Updated Tooling ✓
Type: Injection Moulded Plastic
Manufacturer: Sweet Aviation Model Div. (Japan)
UK Importer: Arba Products



Blackburn Firebrand TF.2

Scale: 1/48th
Kit No: 0448
Price: £38.00
Status: Revised Tooling ✓
Type: Resin, White-Metal
& Vac-formed Clear Plastic
Manufacturer: Magna Models (UK)



DECALS

Albatros Modelworks (Mexico)

ALC/48010 - The Dark Mirages (Mirage F1)

Techmods (Poland)

72105 Republic P-47D Thunderbolt
48009 Dornier Do 17Z-2
48047 Republic P-47D Thunderbolt
32004 Republic P-47D Thunderbolt
32005 Republic P-47D Thunderbolt

Model Design Construction (UK)

D48002 - Douglas AD-4, French Air Force in Algeria

Dutch Decal (The Netherlands)

72048 Lockheed SP-2H
72049 Hawker Seahawk
72050 CH-47D Chinook
72051 Lockheed 212A-26 & 12A-26
72052 Lockheed 212A-26, Focke-Wulf Fw 56 Strösser,
N.A. NA-27 and Curtiss Hawk H75A-7

Max Decals (Ireland)

Max 7207 - DHC-3 Otter

IsraDecal (Israel)

IAF-17 Israeli A-4 Skyhawks (1/72nd)
IAF-18 Israeli F-15I (1/48th)
IAF-19 Israeli F-15I (1/32nd)

Blue Rider (UK)

MS-007 Ki-43-II Oscar, Ki-46-II Otsu, Ki-45-Kai C and
Messerschmitt Bf 109E-1 (1/144th)
BR-256 Manchuria/Manchukuo Part 1 - Breguet Bre.14,
Avro 504K, Breguet Bre.19A2 and Junkers Ju 86Z-2
(1/72nd)

BR-257 Manchuria/Manchukuo Part 2 - DH60 Moth,
Messerschmitt Bf 108, Tachikawa Ki-9 Spruce,
Tachikawa Ki-55, Nakajima Ki-27b and Nakajima
Ki-43-II ko (1/72nd)
BR-0306 Greek Air Force DH.9 (1/72nd)
BRCD-001 Air Forces of the Baltic States 1918-2001
(1/72nd)
ICG-7202 Fokker D.VII Foreign Colour Schemes
(1/72nd)
ICG-4802 Fokker D.VII Foreign Colour Schemes
(1/48th)

High Quality Decals (Czech Republic)

72001 - Arabian MiGs Part 1 (MiG-21s)

Siga Models (Poland)

00-001 Russian Stars
00-002 Russian Stars
00-003 Russian Stars
00-005 German Crosses
GE-000 Swastika
US-001 US Stars'n'Bars
US-002 US Stars'n'Bars
US-003 US Stars'n'Bars
Note: All the above are suitable for 1/144th, 1/100th &
1/72nd scales.

Whirlybird Decals (UK)

WB72001a - Captured Eagle (N.A. P-51B)
WB72001b - Invasion Helo (CH-136 Kiowa)

Model Alliance (Australia)

CDS-015 Boeing 747 Qantas Commonwealth Games
(1/144th)
CDS-023 Qantas/JAL 747-300 (1/144th)

CDS-024 TAA A-300 Proposal Livery (1/144th)
CDS-036 Fokker F27, Ansett (1/72nd)
AAF-20 RAAF C-130J-30 (1/72nd)
AAF-23 ARDU Low-Viz DC-3 (1/72nd)
AAF-24 ARDU DC-3 (1/72nd)
AAF-26 RAAF Hawk 127 (1/72nd)
AAF-31 Macchi MB.326 (1/72nd)
AAF-33 RAAF Hawk 127 (1/72nd)
AAF-34 Mirage IIIEO (1/72nd)
HD-7225 AH-64A Apache Hellenic (Greek) Army
(1/72nd)

Hawkeye Models Australia (Australia)

CGDS-03 HH-65A Dolphin (1/72nd)
CGDS-04 HH-65A Dolphin (1/72nd)
CGDS-05 HH-3F Pelican (1/72nd)
AVW-HD01 AS350 Daulphin (1/72nd)
AVW-HD02 MBB BK-117 (1/72nd)
AVW-HD07 UH-1D (1/72nd)
AVW-HD08 Agusta A-109 (1/72nd)
AVW-HD10 Agusta A-109 (1/72nd)
AVW-HD19 Bell Huey & Westland Wasp (1/72nd)

SCALE

The following prefixes within the item codes identify scale:

200 = 1/200th
144 = 1/144th
100 = 1/100th
72 = 1/72nd
48 = 1/48th
35 = 1/35th
32 = 1/32nd
24 = 1/24th

No code means they are multi-scale.

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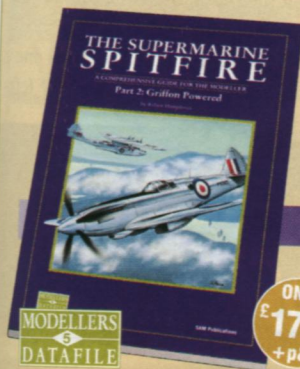
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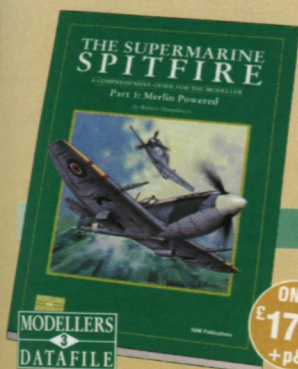
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The War Horse of the Luftstreitkraft

EDUARD'S 1/48TH ALBATROS D.V & D.Va KITS

by Stephen T. Lawson

In this article I will study four of Eduard's 1/48th scale examples of the venerable Albatros D.V and Va types. This is a standard kit that had some small differences until it was released in their 'Profi-pack' version.

Essentially the instructions in kit 8013 were all sectioned individually. In all the later kits the parts were detailed by combining components into chronological building steps that had sub-assemblies detailed using inserts and arrows pointing to their ultimate locations within the fuselage halves, thus maintaining the exploded-view method so prevalent in written instructions. It is important to note the components for the Albatros Dr.I are not the same tooling as previous kits. This review will deal specifically with the kit #8030.

Step 1

With every Eduard 1/48th Albatros D.V or Va kit I also purchase a Tom's Modelworks etched-brass set (#210). The detail involved is very fine and has parts that you won't find elsewhere. First I replace the kit harness pieces (PE 9 & 22) with Tom's pieces. Next I scratchbuild a reserve/main fuel tank assembly from a sandwich of .030 & .060 thou sheet plastic. These will rest behind the engine cylinders against the forward cockpit bulkhead (PP24) and engine bearer shelf (PP12). This will have two filler spouts and a fuel pump housing directly on top of the tank.

With the attachment of the 'spark control box' (PE18) one may want to add a shim of .030 plastic between it and the left





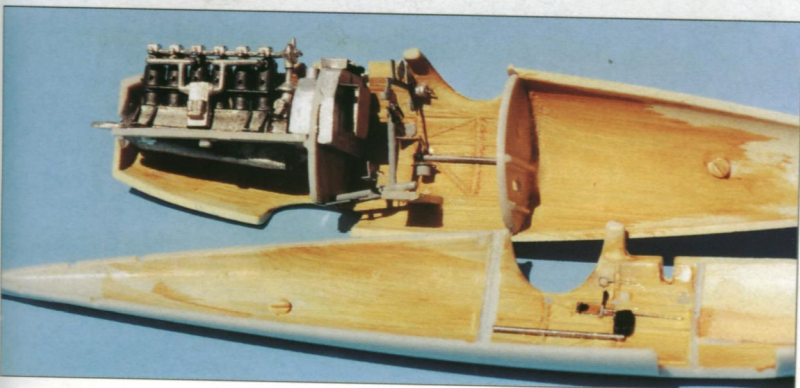
Opposite page:
D.V. 1119/17 flown
by Oblt E. von
Althaus, Jasta 10,
July 2-25, 1917
(Eduard kit)

This Page:
D.V. 1148/17 flown
by Lt H. Adam, Jasta
6, August 1917
(Eduard kit)

Build Picture:
The open interior,
showing the main fuel
tank of the Eduard
D.Va (#8013)

fuselage wall (PP1). PE18 contains the magneto switch (circular instrument) and the spark control handle that the instructions tell you to fold upwards. Add a short section of wire to the bottom of the spark control handle leading forward over the starting magneto (PP9) and disappearing into the forward cockpit bulkhead. To be absolutely correct one could add a micro section of plastic to the circular area and there was a key that was attached to the fuselage by a small chain but would reach to the circular instrument. (Much like a key to the ignition of a modern car). The Bosch starting magneto' (PP2) is a little thick so I cut away 1/3 of its backside thickness. There should be a bundle of ignition wires with a faded red insulation cover leading from the lower area of PE18 along the fuselage interior behind the BSM (PP9) to the forward cockpit bulkhead.

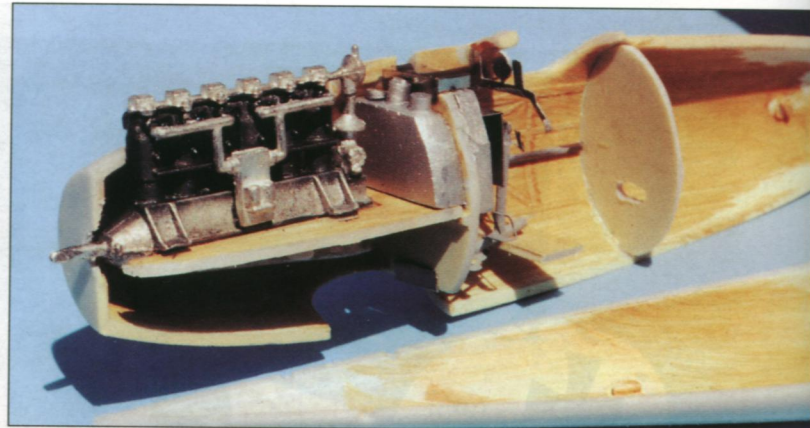
The fuel/air control panel (PE12) is mounted to the fuselage right side per instructions. Attached to PE12 is the fuel quantity gauge. In this issue of the kit the panel has the shapes of the switches etched to it, in earlier issues the switches are separate. Eduard did not provide the air pressure gauge to be located at the apex of F/AP (PE12). The tube for the fuel tank pressure hand-pump (PP8) needs to be drilled out to accept the handle (PE26). The same goes for the water pump greaser-tube (PP6) and its handle (PE26). I deleted PP23 and modified PP22 by cutting away 2/3 of its length and using the forward 1/3 piece as a cross brace as the instructions require. The rear cockpit bulkhead (PP25) is used without the cross brace locator ribs and I cut a hole in its lower area to accept the rigging lines that will come later. On the rear MG brace (PE13) I add a section of sprue to the rear of the tachometer. I then use thick



gel-type cyanoacrylate glue to add depth to the front of the bar assembly only. Then when dry paint and add the instrument face. The tachometer was laid on its side for ease of reading in flight and was a normal practice of its time. Cables and a lock can be added to the control column (PP5). I like to replace the kit item PE17 for the column head from Tom's Modelworks. The Tom's item has the small throttle lever. For the D.V variant a circular plate is impaled centrally on the forward leg of the control column (PP5) at its mid point. This was the pivot point for the aileron actuation and the cables extend upward into the top wing. When all cockpit items are in place I carefully add fine wire for the rudder and elevator control cables.

Step 2

Begins with the generic Mercedes six-cylinder inline engine. Erasing the centre line seam and opening up the gaps between the cylinders is needed. The upper portions of the cylinders are covered by water jackets and are the colour of blued gunmetal. If you are doing the D.Va version you'll be duplicating the Mercedes 180hp D.IIIau engine. The D.V types saw the installation of the Mercedes 170hp D.IIIa. Primarily the water pump on the D.IIIau is located directly behind the oil pump and some of the external plumbing is routed differently. Add fine wire painted black or white to make spark plug wires. Concerning the twin Spandau Maxim machine guns, you may want to alter the cocking handle assembly (PE19) by removing the spade-shaped grip/handle and replace it with a simple lever



with a rounded knob protruding at a 90 degree angle to the right. It is confirmed by photographic evidence that none of the D.V types had this 1918 spade-shaped cocking handle and no picture of a D.Va exists with them either. The Albatros fighters used 'T' shaped handles in the cockpit leading from the cocking levers on the right side of the gun breeches and worked via a linkage system. Add gun barrel tubes that protrude from the gun jacket ends (PE10). If you can, get a set of 1/72nd scale rear gunsights, which are perfect for the 1/48th scale guns. Add a set of brackets to the forward edge of the ammo box top (PE14) to simulate forward gun supports. Depending on the adherence to the exact placement of the engine-bearer shelf (PP12) in

This page:
Build Picture:
The open interior,
showing the main fuel
tank of the Eduard D.Va
(#8013)

D.V, 4594/17 flown by
Lt. P. Straehle, Jast 18
& 57,
October-November
1917 (Eduard kit)





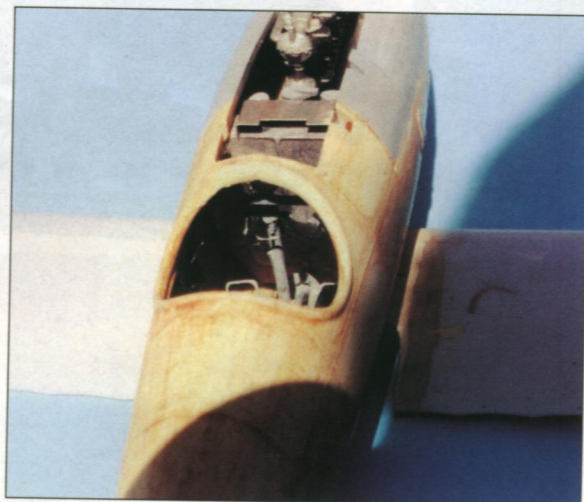
This page:
D.Va, 7161/17 flown
by Vzfw Guergenz,
Jast 46, April 1918
(Eduard kit)

relation to the forward cockpit bulkhead (PP24), you can adjust the sit of the motor by cutting down the 'lugs' under the four engine mount flanges, and add R&R Model detail nuts from Grandt Line to represent the motor mount nuts and bolts that would be apparent on the top face of the flanges. I also deleted the empty belt chutes (PE24) and replaced them with bent solder/flux. If you use the left chute cover' (RP2) you'll only need one chute for the right gun.

Build Picture:
Cockpit aperture of
the D.Va (#8013)

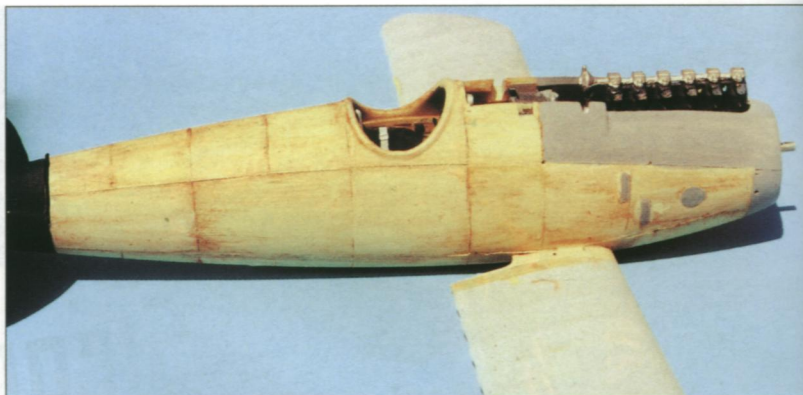
Step 3

Again pre-drill all strut and rigging holes. Add the underside radiator face (PE1) after you have painted or applied lozenge decal to the underside surface of the top wing. I generally paint the undersurface of the top wing and the upper surface of the lower wing at this point before assembly and rigging. The top wing should be altered here for the D.Va variant. Cut out areas between the double ribs up to the rear leg of both interplane 'V' struts. A small piece



of metal rod should be inserted into a pre-drilled holes in the ailerons so that it passes freely through the holes you just cut in the top wing. The upper radiator face (PE2) can be used or an alternative is available in the Tom's Modelworks fret. It depends on which one is applicable to the machine you are building. The left chute cover (RP2) should sit flush on the fuselage and any gap between it and the gun breech should be filled then painted. The right gun chute (RP1) needs a single line scribed across its face to denote an access cover. Also you'll need to add a second chute from the top of the ammo box to the right face of the left gun. Most will just use the MG access panel (PE6) but a good judge will note the chute missing and disqualify the kit from top-three consideration. Don't add the windscreen film yet. The seam on the exhaust horn (PP18) can be erased and the open end drilled out partially to simulate the original. I like to simulate the bands holding the auxiliary struts (PE28) with clear decal film. Otherwise all other kit parts I add as per instructions.

The weakest part of a 'Veestrut' landing gear assembly in plastic is the side to side twist. This causes the gear legs to break. I replace the landing gear legs (PP20 & 21) and the exposed axle ends (PP16) with the appropriate diameter brass rod. I use upholstery thread to wrap around the lower legs of the landing gear with the axle in place to simulate the bungee shock chords. This looks like the original and actually secures the axle in place.



Step 4

The kit rigging control horns (PE23) are replaced with the Tom's Modelworks versions. I personally like scratchbuilding my kit propellers from light and dark woods. I have also learned to paint the laminations with convincing effect. Most Albatros fighters were equipped with the light and dark laminated propellers. Carefully check the aircraft you are modelling to choose the right propeller. Don't limit the choices to the Eduard instruction. The D.V and D.Va both used all three types of propellers that Eduard offers. The company determined the paddle profile of the propeller (it was their trademark) while the engine application determined its pitch and length. So all

This page:
Build Picture:
One side of the
Eduard D.Va
(#8013)

D.V flown by Vzfw
Bartels, Bogohl 4,
June-July 1918
(Eduard kit)





This Page:
D.V (Early Production)
flown by Manfred von
Richthofen, JG1, 6th
July 1917 (Eduard kit)

three profiles could be seen on either the D.V or the D.Va, but with different pitches because of the different horsepower in either aircraft.

After final clear coating of the model attach the windscreen. **MAN**

References

- Profile No. 9 The Albatross D.V by Peter Gray, 1965 Profile Publishing
- Albatross Scouts Described by Chas Scaedel, 1971 Kookaburra Technical Publications
- Albatross Fighters by Ray Rimell, 1991 Albatross Productions Ltd
- The Last Albatross by Colin Owers, 1988 Aviation News Pages 216-221
- Albatross D.V & D.Va described and drawn by Ian Stair, Scale Models 1972
- Albatross D.Va German Fighter of WWI by Robert Mikesh, Smithsonian Institution Press
- Scratchbuilding Techniques by Alan Clark, Scale Models International 1990, Pages 174-5
- Scratchbuilt Albatross D.Va by Alan Clark, Scale Models International, 1990, Pages 491-495
- Lafayette Foundation Archive, Denver CO. USA
- Spandau Machine Gun by David Watts, 1998 WWI Aero

This page:
Build Picture:
The other side of the
Eduard D.Va
(#8013)



Kit No.	Subject	Parts	Decals
8013	Albatross D.V	Plastic 36, Photo-Etched 63, White Metal 4, Clear 1, Acetate Film 4	• 1. 'Blitz' Jasta 5 • 2. MvR July 6, 1917 • 3. 'Mailed Glove', Jasta 5
8019	Albatross D.V 'Red Baron'	Plastic 42, Photo-Etched 48, Clear 1, Acetate Film 4	• 1. Prototype
8030	Albatross D.Va	Plastic 42, Resin 2, Photo-Etched 48, Clear 1, Acetate Film 4	• 1. MvR 2059/17 • 2. 'S', Jasta 78b
80??	Albatross Dr.I	Plastic 63, Resin 4, Photo-Etched 92, Clear 1	



Mirror-Wave Junkers

by Alfonso M. Berlana. Translated by Philip Cobrey

From the mountainous and cold Norwegian lands, between the years of 1943 and 1945, operated units of Junkers 188 watching over and controlling the traffic of Allied merchant shipping on route toward the Soviet ports situated on the White Sea. These machines abandoned the normal green tones of camouflage, doubtless obliged to do so by the climate and geography, to 'dress' themselves with others improvised in the field. The creators of these original and imaginative camouflage patterns were ignorant that their 'invention' would be the delight of modellers and enthusiasts fifty years later, and I am one of them.

Using RLM colours each machine was painted following instructions, apparently, from the pilot and because of this each one was quite different. Looking for suitable decals I found some from AeroMaster (#48145) that put me on route toward the Norwegian fjords. The chosen aircraft was based in the Nordic lands and operated by 9/KG26 (9th group of Kampfgeschwader

26) at the end of 1944. With all this and the Dragon kit, I could now begin to ready the airbrush for a novel challenge!

Detail Sets

There is a set of photo-etched parts in the Eduard range (#48-147) that turned out to be excellent for the interior of this aircraft. The pieces that were used fitted perfectly. The 'weighted' wheels from True Details (#48029) were also used and found to be perfect. I found the Verlinden Luftwaffe Aircraft Guns (#1261) set very useful for the defensive armament of the Ju 188.

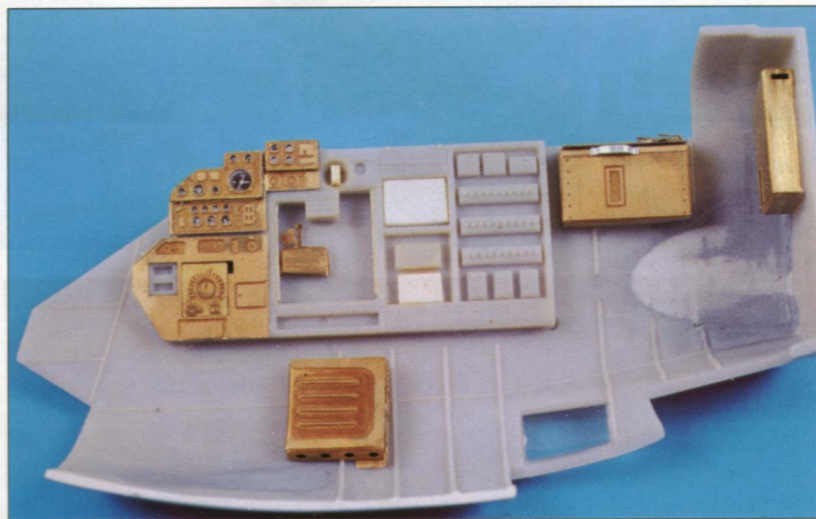
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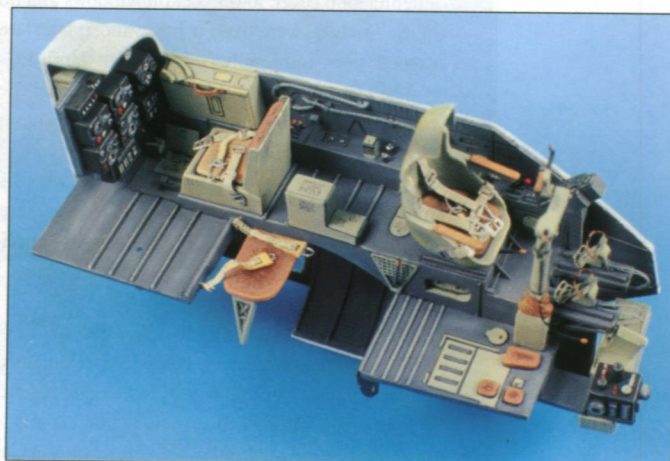
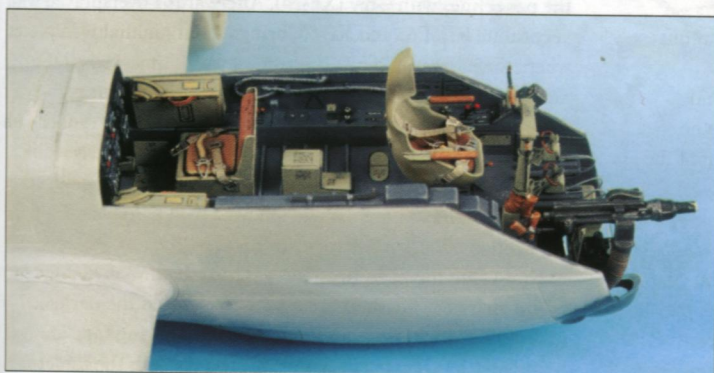
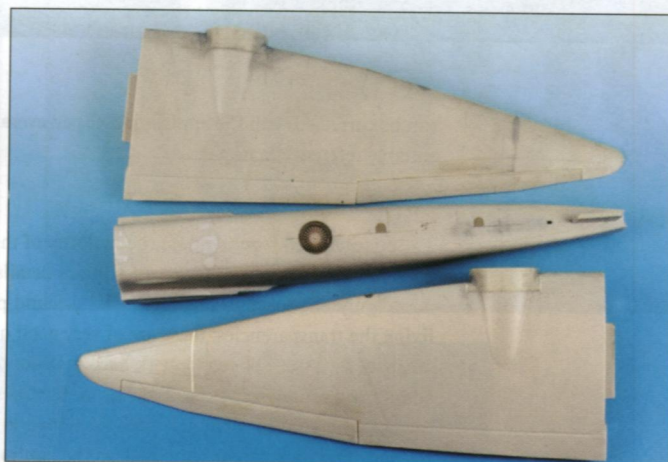
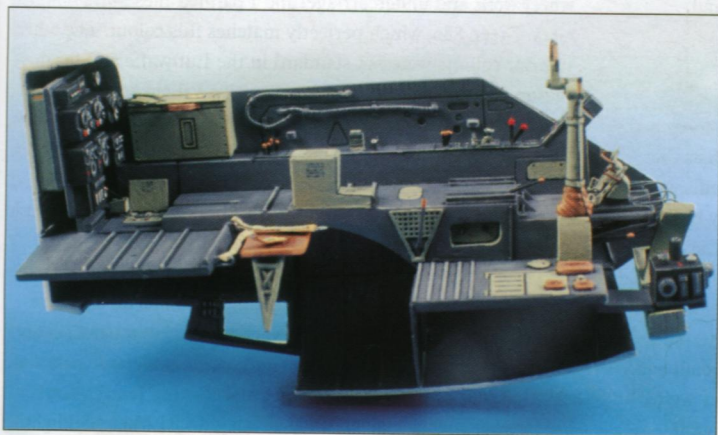
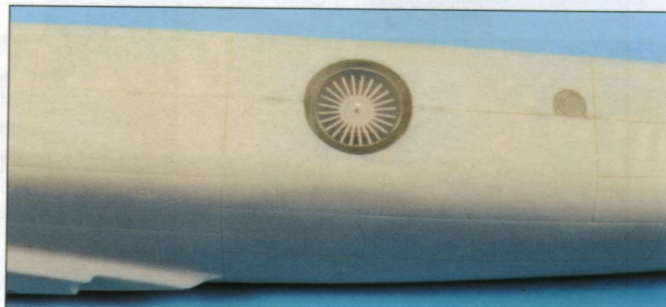
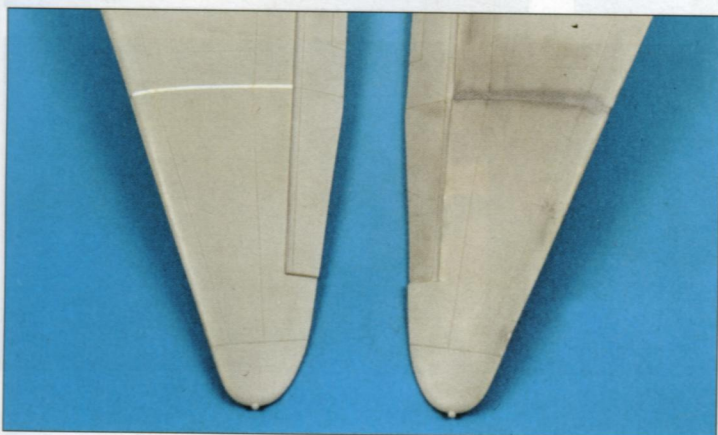
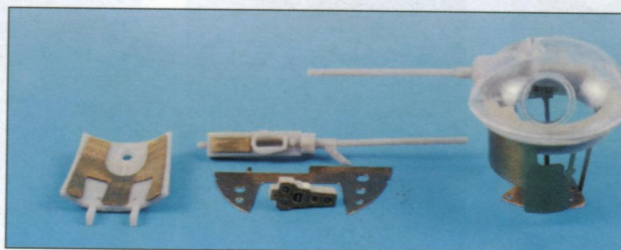
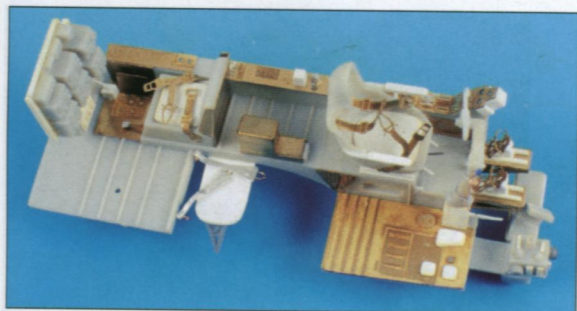
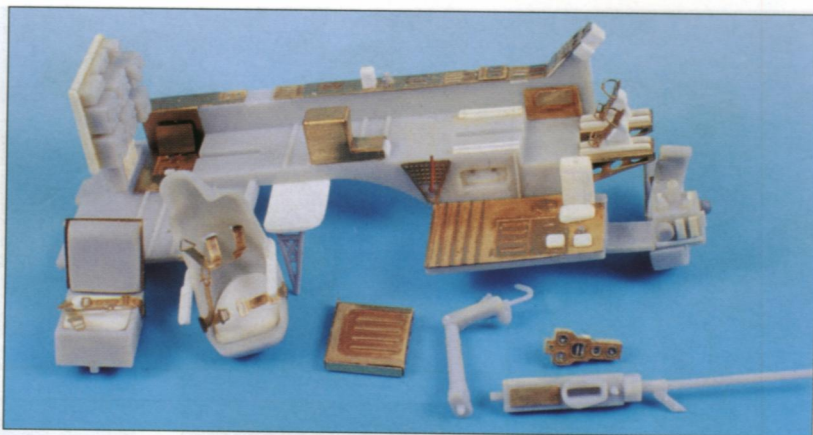
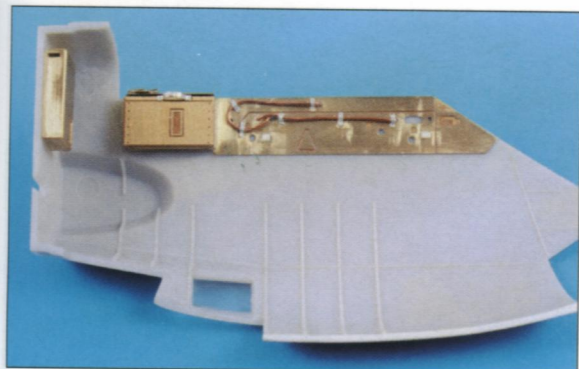
In the excellent AJ Press (Aircraft Monographs 33 and 34 by Robert Michulec, (I am a real fan of these)) I found everything that I needed to know about the Junkers Ju 188 and 388. These two books have exhaustive information and their price is very reasonable.

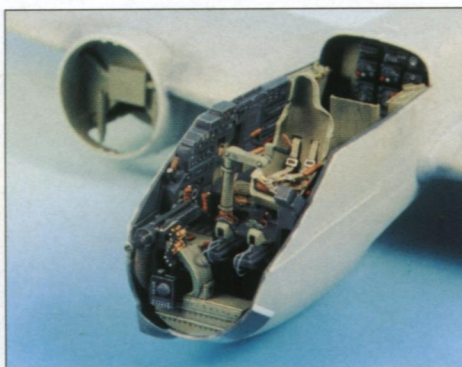
Kit and Construction

The version that I wanted was the A-2, the bomber which used Jumo engines (Jumo: acronym of Junkers Motoren). The Dragon version with Jumo engines carries torpedoes although there is no trace of any bombs or their pylons. The missing pieces that I needed to convert my model to bomber configuration were cannibalised from a Revell Junkers Ju 88A-4 kit.

The presentation of the kit is impeccable: a box with a beautiful illustration, a perfect parts layout, various sheets of useful photo-etched parts, splendid plans...but the whole sensation of quality disappeared when I began to put the pieces together. Big imperfections everywhere left me open mouthed, and furthermore in some places the instructions were confused. Strangely the largest pieces were the ones with the most faults; I didn't find problems with any of the smaller parts. I had to equip myself with abrasives, glue and fillers of all types in order to solve all the errors made in 'my Junkers'. Fortunately everything







can be corrected with the application of perseverance and suitable reference material.

Interior

The enormous cockpit is where the majority of the photo-etched parts are situated. I have added a few more details such as the dorsal gunner's seat and the flare pistol. I found problems with fixing the transparencies; these are of very good quality but are an awful fit. I was obliged to work hard in order to adjust them, adding and removing pieces of plastic on the fuselage. The dorsal turret is constructed separately and positioned in the model at the end. The transparent parts such as the landing light, the antenna loop cover, lower cockpit windows and other small ones in the fuselage, were fixed using cyanocrylate; later they were rubbed down and finally polished with Tamiya Compound.

The last phase of building was to cover all the transparencies with pieces of Tamiya adhesive tape cut out with a triangular X-Acto.

I carefully examined all the areas that were filled and masked. When I had satisfied myself that there were no defects to be found, I was able to begin the application of the overall paint scheme.

Painting

All the interiors were hand painted with Vallejo acrylics, predominantly Dark Grey 994, which imitates RLM 66, the colour of the inside of this machine. Some parts and areas of the interior were painted in RLM 02, like the seats, munition cases,

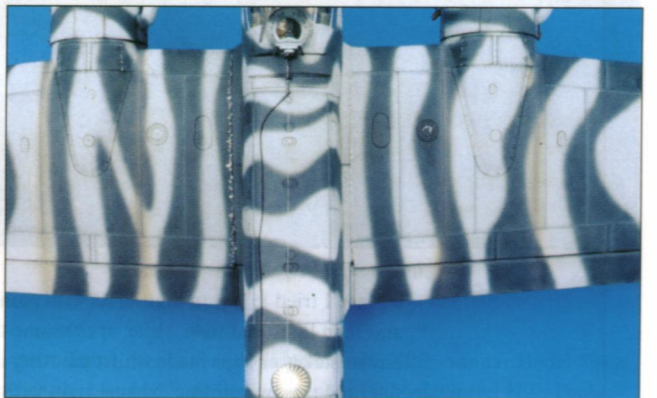
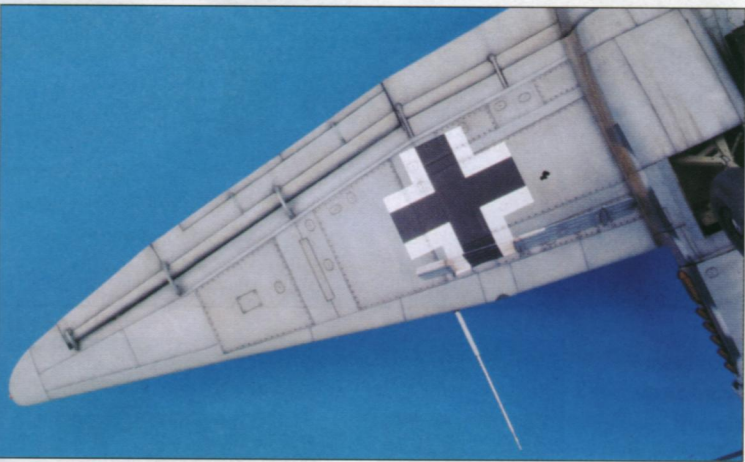
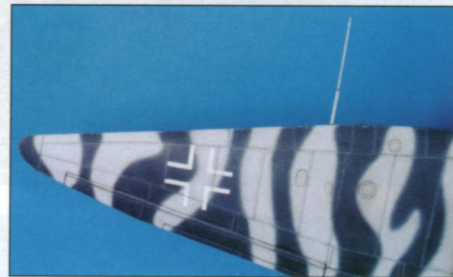
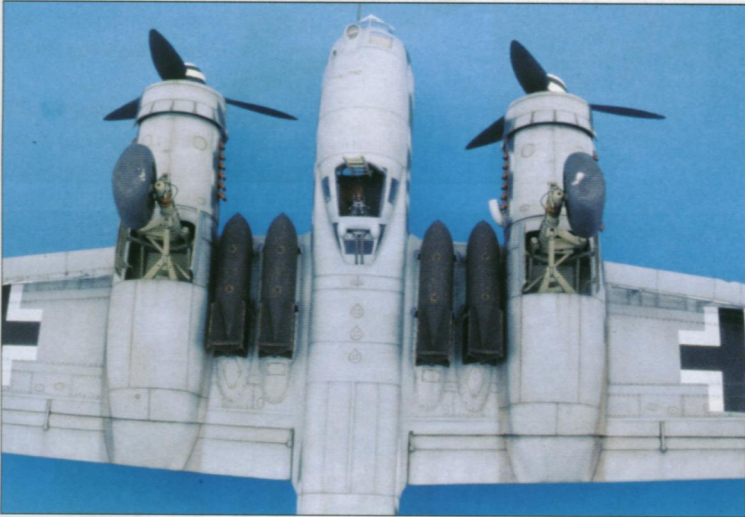
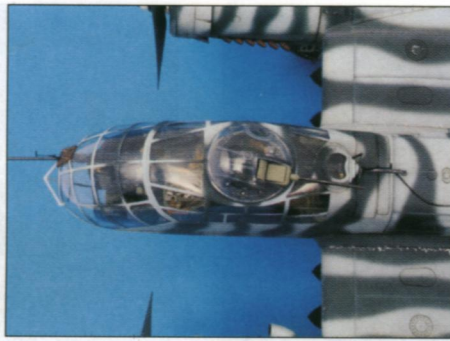
wheel wells and undercarriage, and I painted these with Grey/Green 886, which perfectly matches this colour. The other interior colours were not standard in the Luftwaffe and for this reason I chose colours from the extensive Vallejo acrylics range.

The undercarriage legs, doors and wheels, dive brakes, bombs, pitot tube and propeller blades were painted separately in order to attach them later on.

To paint the propellers and the dive brakes I used an airbrush and pieces of Tamiya tape cut for the purpose.

The chosen camouflage was most unorthodox. It broke up the silhouette of the aircraft and at the same time hid the machine among the snowy mountains of Norway. On the upper surfaces there were light and dark stripes and on the underside pale blue. All the exterior paintwork was airbrushed with Tamiya acrylics (see colour chart). I began underneath with RLM65, highlighting the panel lines with Grey (XF-24). Afterwards I oversprayed with very dilute RLM 65 and XF-55, bringing out highlights in places where the paint would have been most worn. I masked all the areas I didn't want to mark while I was painting the upper surfaces, then turned the model over and painted the rudder with RLM 81 and RLM 82. I covered the whole of the rudder with Tamiya adhesive tape and painted the remainder of the upper surface with RLM 76. This was followed with a freehand application of dark grey stripes in RLM 74.

Now came the most tiresome part: to 'shadow-shade' the entire airframe, the light areas with XF-24 and the dark ones with XF-55, including the rudder. Using masking tape always helps gave a better result with this task. As with the under





surface I tried to put in highlights with paint thinned down and then lightened with white; at the same time I corrected any mistakes or slips made whilst painting the stripes. I followed this by painting exhaust stain with XF-1, XF-64 and XF-54 thinned down and applied in that order. Having finished the camouflage I varnished it lightly with MicroGloss and was then able to add the decals. Once these were completely dry I gave them another coat of MicroGloss to fix them in place. Next I used some very dilute black oil paint in areas where there could have been oil/fuel leaks or spillages and highlighted the panels, above all the ailerons and flaps. With a very finely pointed brush I applied paint chips using Tamiya enamels X-10 and X-11.

I examined all parts in order to correct any possible mistakes or slips of the airbrush and when I was satisfied I varnished it with matt Marabu dissolved in Model Master thinners (#1789). I removed the masking from the transparencies, glued on all the parts I had painted separately and added antennas made from stretched sprue.

Conclusion

The colours and shades of the Luftwaffe in WWII continue to be controversial. In each district, town or city there are people who think they are experts on the topic, taking modellers to task when all we want to do is complete a model. The problem is that



they rarely agree among themselves! Weighing up the information from various sources I propose the following tones for the scheme:

Mirror-Wave Junkers Colour Schemes

RLM 65 = 60% XF-23 + 40% XF-2
RLM 74 = 70% XF-24 + 30% XF-2
RLM 76 = 40% XF-23 + 60% XF-2
RLM 81 = 50% XF-27 + 50% XF-62
RLM 82 = 60% XF-26 + 40% XF-62

The mixtures suggested are at best possible approximations. They may be varied and lightened depending on the tastes of the individual modeller.

The panel lines were airbrushed using XF-24 and XF-55, and the latter was also used to bring out highlights in the blue and grey areas of both the under and upper surfaces. **MAM**

Events

2002

February 3rd

IPMS Milton Keynes, ModelKraft 2002 at the Bletchley Leisure Centre, Milton Keynes. For more information contact Phill Smith on 01908 505988 or Email: psmith6328@aol.com.

February 3rd

South London Aircraft Enthusiast's Fair, Dulwich College, South Circular Road (A205), London. SE21 7LD. Contact Keith Manning on 01372 725063 (evenings) or Email keithmanning01@genie.co.uk.

February 9th

Fleet Air Arm Museum Model Show, RNAS Yeovilton, Ilchester, Somerset. For more details and advance tickets contact the Marketing Department on 01935 842619 or 842614.

February 9th

10th Annual Winter Model Contest & Swap Meet at the Raymond Park Middle School, 8575E Raymond Street, Indianapolis. For details contact Rick Wilkes, PO Box 1376, Greenwood, IN 46142, USA or Email: rwwilkes698@aol.com.

February 10th

Yorkshire 2002, Huddersfield Sports Centre. For more information contact Mike Robson on 01484 350612 or Email michael.robson@ntlworld.com

February 10th

IPMS Richmond presents 'Old Dominion Open 2002' Invitational at the Richmond International Raceway, Richmond, Virginia, USA. Contact Aaron Winer, 2427 Cedar Cone Drive, Richmond, VA 23233, USA, Tel: (804) 270 7898.

February 23rd

IPMS/Eddie Rickenbacker Annual Invitational Model Contest, Capital University Student Center, Columbus Ohio. For more information contact Patrick K. Moore Email: bentwingbird@hotmail.com or Roger Coe Tel: (614) 866 4163.

March 3rd

North Somerset Model Show, Somerset Hall, Portishead. For more details contact Simon Parks-Lockett on 01934 628565.

March 9th-11th

Model Expo 2002 and Australian Open Plastic and Scale Modelling Championships, Arts & Crafts Pavilion, Royal Melbourne Showgrounds, Epsom Road, Ascot Vale. For details contact Model Expo 2001 c/o IPMS Australia Inc, GPO



Box 1187K, Melbourne 3001, Australia or tel Graeme Dodd (03) 9808 0341 or Ian Vale (03) 9873 4256 Email IanVale@bigpond.com.

March 16th

Flanders Modelling Festival and Contest 2002 at the Don Bosco Technical Institute, Salesianenlaan 1, B-2660 Hoboken (Antwerp), Belgium. For details please contact Rudy Binnemans, IPMS-Belgium-Antwerpen, Te Couwelaarlei 103/21, B-2100 Deurne. Tel/Fax: (00) 32 3 324 22 04.

March 16th

IPMS/USA New Jersey presents 'Mosquitocon 2002' at the Wayne Police Athletic League, PAL Road (off Route 23). For more information contact Bill Connolly, 3 Timkak Lane, Pennington, NJ 08534, USA. Tel: (609) 737 8596.

March 16th-17th

Southern Expo, Hornchurch Sports Centre, Hornchurch Road, Hornchurch, Essex. For more information contact W. Arrowsmith, 14 Link Way, Hornchurch, Essex. RM11 3RW, Tel: 01708 473038 or Email southernexpo@yahoo.co.uk.

March 23rd

Aerogumbe at Shoreham Airfield, Shoreham-by-Sea, Sussex. For more details contact 01424 440644.

March 30th

November 24th. Plymouth Expo 2002 at the Plymouth Guildhall. Contact Alan Edhouse, Tel: 01752 262340 or Email: Alan.Edhouse@Skynow.net.

April 7th

IPMS Barnet's Model Show in partnership with The Royal Air Force Museum at the Royal Air Force Museum, Hendon. For more information contact: Les Rawlins on 0208-207-4207 or Email: kar.lesrr@btinternet.com.

April 12th to 25th

'Citta di Verona', at the Town Hall Verona, Italy. Organised by the Associazione Modellismo Storico (AMS). For more information contact AMS c/o Diego Turri, Via Brunelleschi 15, 37138 Verona, Italy. Email piercast@ats.it.

April 13th & 14th

IPMS Region II Convention at the Elk's Lodge, SAR 405, Titusville, Florida. For more information contact Mark Warhling, 3149 Brentwood Lane, Melbourne, FL 32934 or Email: mwar123@cs.com.

April 13th

1918-1939 Between the Wars at the Kiwanis Recreation Center, Devers Street, Fayetteville, North Carolina. For more details contact Jim Harshman, 36BJ Palmer Drive, Spring Lake, NC 28390, Tel (910) 436 9459 or Email jwharshman@yahoo.com

April 20th

Poole Vikings Model Club Annual Model Show at Poole Grammar School, Gravel Hill, Poole Dorset.

June 1st

IPMS Salisbury 2002 Model Show at the Wyvern College Sports Hall, Church Road, Laverstock, Salisbury, Wilts. For more details contact David Lane, 13 Park Street, Salisbury, Wilts. SP1 3AT.

November 9th & 10th

IPMS (UK) Modelworld 2002, Telford International Centre, Telford, Shropshire. For more information call the IPMS (UK) recorded events information line +44 (0)1332 776 776

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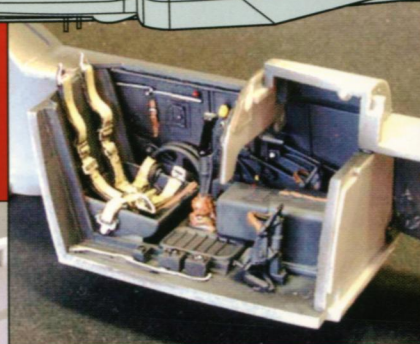
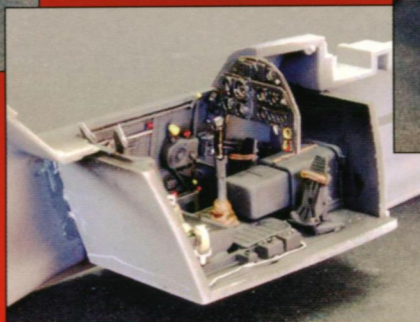
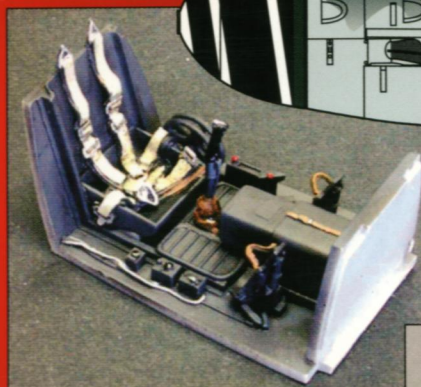
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